TRANSACTIONS

OF THE

MASSACHUSETTS HORTICULTURAL SOCIETY

FOR THE YEAR 1911

PART I

PUBLISHED BY THE SOCIETY
BOSTON
NINETEEN HUNDRED AND ELEVEN

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Massachusetts Horticultural Society

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Massachusetts Horticultural Society.

1911.

The Transactions of the Society are issued annually in two parts under the direction of the Committee on Lectures and Publications.

Communications relating to the objects of the Society, its publications, exhibitions, and membership, may be addressed to William P. Rich, Secretary, Horticultural Hall, No. 300 Massachusetts Avenue, Boston, Massachusetts.

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Charles W. Hoitt	*Lectures and*
William P. Rich	*Publications.*

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THE INAUGURAL MEETING, JANUARY 7, 1911.

TRANSACTIONS

OF THE

Massachusetts Horticultural Society.

1911, PART I.

INAUGURAL MEETING.

The Inaugural Meeting of the Massachusetts Horticultural Society for the year 1911 was held at Horticultural Hall, Boston, on Saturday, January 7, at twelve o'clock, noon.

In the absence of President-elect, Charles W. Parker, by reason of illness, Vice-President Hunnewell occupied the chair.

The following communication from the retiring President, Stephen M. Weld, was read by the Secretary:

To the Massachusetts Horticultural Society, Boston, Mass.

Ladies and Gentlemen:

Four years ago at this time you honored me with an election to the presidency of your Society.

I now resign the office after four years' service with thanks for the honor conferred upon me, and taking with me a very much greater interest in the success of your corporation than I ever had before.

It will be perhaps of interest to you if I recall to your mind what has happened during the four years that I have been President.

The Society, for the first time since occupying its new building, has been put upon a paying basis. The much vexed question of the Hayes Estate property and will has been settled to the satisfaction of the heirs and the Society. The differences of opinion which have arisen with the Mount Auburn Cemetery Corporation have been disposed of to the satisfaction of both parties, relieving our Society from the danger of a call for a large amount of money, and settling questions which were liable at any moment to break out and cause us a great deal of trouble.

The income bearing funds have been increased during the last four years $15,900.00.

My own feeling is that a more equitable division of interest should perhaps be made in the Board of Trustees so that every branch of horticulture in its broadest sense should be represented. Apart from this it seems to me that everything is in splendid condition and will surely keep us in the position we now occupy of being the leading horticultural society in the United States.

Yours very truly,
(Signed)
STEPHEN M. WELD.

New York, November 15, 1910.

The reports of the officers of the Society and of the chairmen of the various standing committees were presented as follow:

Report of the Treasurer, Walter Hunnewell.

Report of the Board of Trustees, by the Secretary.

Report of the Delegate to the State Board of Agriculture, by Wilfrid Wheeler, Delegate.

Report of the Committee on Prizes and Exhibitions, by John K. M. L. Farquhar, Chairman.

Report of the Secretary and Librarian.

Report of the Committee on Plants and Flowers, by T. D. Hatfield, Chairman.

Report of the Committee on Fruits, by Edward B. Wilder, Chairman.

Report of the Committee on Vegetables, by Josiah B. Shurtleff, Jr., Chairman.

Report of the Committee on Gardens, by Charles W. Parker, Chairman.

Report of the Committee on Lectures and Publications, by William J. Stewart, Chairman.

The reports as presented were accepted and referred to the Committee on Publications.

The following named persons, duly recommended by the Board of Trustees, were elected Corresponding Members of the Society:

Mr. W. J. Bean, Royal Gardens, Kew, England.
" John Dunbar, Park Department, Rochester, New York.
" E. H. Wilson, London, England.
" Adin A. Hixon, Worcester, Massachusetts.
" Wilhelm Miller, Garden City, Long Island, New York.
J. Ewing Mears, M. D., Philadelphia, Pennsylvania.
Prof. U. P. Hedrick, Geneva, New York.
" John Craig, Ithaca, New York.

The meeting was then dissolved.

William P. Rich,
Secretary.

HORTICULTURAL PAPERS AND DISCUSSIONS.

GARDENING FOR AND BY AMATEURS.

By J. Otto Thilow, Philadelphia.

Delivered before the Society, January 14, 1911.

The greatest activity in the past decade in horticulture has been through the enthusiasm of the amateur. Much of this inspiration has been created by the great amount of travel abroad, where the minutest detail is of interest, because everybody is more or less busy in some branch of horticulture; and since the interest shown by our own plant and flower lovers at home, it has spread and reached nearly all parts of the country.

By and through this interest the whole country has awakened to the fact that great returns have come to those who are active in the work, not from a remunerative standpoint, but in interest, better knowledge of plants and trees, studying the varied aspect of nature, aiding in the development of vegetation, and conforming as much as possible to natural conditions. This is perhaps the most interesting part of the work, as there is so great a variation that it becomes interesting and responsive, while landscape architecture and formal gardening adhere so much to set conditions that they become tiresome, neither can they be attempted cheaply.

We would not decry the skill of the landscape gardener, architect, and engineer; were it not for these, much of the beautiful city environs would not be known. Much credit is due to many of these skilful artists for having brought order out of chaos, and for having been instrumental in beautifying the localities adjacent to our cities. Massachusetts can boast of having taken the lead in town and country improvement and in railroad station betterment.

The florist and nurseryman are all busy people, overrun during the period of planting, and busy at other seasons preparing for the rush; awake only to inquiries and matters that lead to business; but never have they time to educate or to inculcate the taste and

love for flowers, plants, and trees; nor time even to assist in the work of civic betterment; all of which emanate from a horticultural standpoint.

We well know the attention paid to horticulture, ornamental and natural, in connection with the Expositions and World's Fairs held in this and other countries. Before anything is done in erecting buildings, the landscape architect is consulted as to the most judicious lay out in conformity with the space allotted; for without the attractive approach amid grass, shrubs, flower-beds, and tree clusters, the undertaking does not make and leave an impression, nor is it attractive.

My experience with people who have visited Industrial Expositions of this country and Europe has been that they bring with them an impression of the horticultural setting, or the memory of some special feature in floriculture; so, from an educational standpoint, it pays to adhere to and improve in the landscape effect.

The landscape gardener studies for effect and impression, by establishing harmony and scenery. Nature supplies the groundwork and the embellishment, the trees and shrubs, plants and grass; the individual applies these to his or her liking, and through this, every conceivable style and art have sprung up that it is possible to conceive; but in nearly all cases the adherence has been toward a natural condition, such as stone or grass steps from which alpine plants protrude from the crevices, irregularly laid flat stone walks with fragrant herbs of low growth planted in the joints, so as to emit fragrance when disturbed by walking over them, inclined walls with forgetmenots, columbines, or hardy pinks growing from the irregular crevices, or an accidental and irregular brook or stream planted with arrowhead, cat-tail, or wild rice.

The terrace garden is another and very resourceful style to which a varied and interesting study of floriculture can be applied. Annuals in connection with perennials make variety year after year and suggest colors for localities where best suited. All these and myriads of styles conforming to the varied tastes are to be found in all parts of the country where it is possible to get even a suggestion of life and color in plants of all kinds.

Emanating from this activity in horticulture has sprung the

demand for the literature which has become so highly interesting to the horticulturist and the amateur, acquainting the reader with the possibilities in all parts of the country, illustrating some of the most attractive places which have been entirely conducted from the beginning by the amateur; these illustrations show admirable taste and art.

It is not surprising that one will find a whole family taking active interest and personally conducting and doing the work needed to bring about the results in either the hardy garden, rose garden, rock or water garden.

Tastes vary as much in this direction as in any other hobby, except that there is none other that offers as much variety, health, enjoyment, and information.

By this personal application the amateur becomes laden with ideas which are responsive to the successful experimenting with plants, and being capable of describing, the write up by such, with the living illustrations from photography, has been the means of great inspiration among plant lovers the country over; and in few places is there a spot so sterile that there is not a bloom of some kind during the growing season.

It can be claimed therefore that the impetus given to horticulture and floriculture has been by and through the enthusiastic amateurs who have been rewarded with results for their personal efforts, close application, and common sense practice. It is not uncommon to find among the amateurs many with as good botanical intelligence and knowledge of a wide range of plants as are found among the professionals.

The reasons are obvious, for our state institutions are thoroughly equipped in their horticultural departments for practical work for men and women. At Ambler, Pennsylvania, has been established a school of horticulture for women. The full course consists of two years of twelve months each.

The plan of the Pennsylvania School of Horticulture for Women has originated in the desire to offer to women an opportunity to fit themselves for an occupation at once healthful, pleasant, profitable, peculiarly fitted to their gifts, and in which they have taken an intelligent interest and active part. An outline of the courses given is as follows:

1. Horticulture. Growing of vegetables and flowers, including study and preparation of the soil, planting, propagating, fertilizing, etc. Use and care of tools. Care of lawns and shrubbery. Planting and care of orchards and small fruits; trimming, pruning, propagating, gathering. Control and elimination of insect and fungus pests.

2. Botany. Systematic and economic botany as directly applicable to practical horticulture. Practical experiments in germination and nutrition.

3. Chemistry. Elementary, theoretical, and practical. Agricultural chemistry, analysis of soils. Chemistry of garden crops and its relation to the use of fertilizers.

4. Marketing of Produce. Study of market condition. Preparation and arrangement of produce for sale.

5. Agricultural book-keeping and business correspondence.

6. Garden carpentry and greenhouse construction. Use of simple wood-working tools; making of light boxes, frames, etc.; glazing and painting sash; lectures on green-house construction.

7. Preserving of fruits and vegetables.

8. Bee keeping.

9. Poultry raising.

10. Elements of surveying and garden design.

11. Demonstrations and opportunity for some practical work in the ordinary care of a horse and cow.

The most able and beneficial assistant to the commercial florist of this country and Europe is the wife or other assistant of the fair sex. The success of a very large proportion of florists is directly attributable to the help and counsel of the wife, and in many instances where it has been necessary that she take the helm the business continues with the same success. This proves the efficiency of woman in a vocation in which she is well fitted.

This is simply to show that there is at present a live and determined effort made by the amateur which is beyond the experimental stage, and from this and other like interests have sprung the many interesting publications, books, and magazines. Exponents in civic work have also stirred the whole country.

School gardens are established in most of the states and are showing great possibilities; the instruction imparted to the children

is practical from the beginning and leads to systematic work. Records show a remarkable increase, and as the enrolment is on the increase each year, it means eventually "A garden for every home." A glance at the commercial side will clearly prove the advancement made. Within a very few years four weekly publications have been established which are devoted to the florists' and nurserymen's interest altogether, besides a market gardeners' journal and one for parks and cemeteries.

These facts illustrate what might be claimed a reasonable condition owing to the increase in population, yet it is a fact that today, we are blessed with an array of horticultural enthusiasts who have stimulated to a great degree the keen activity in floriculture, and engendered a taste and live interest among those from whom no response was expected. The school garden is directly the result of amateur enthusiasts; it has a two-fold mission; first, to keep children active during a period which would be devoted to idleness; second, to inculcate a taste as well as knowledge of plants, so that this knowledge would be put into practice in many homes where these conditions were not known before, and ultimately leading to better civic conditions in the home and the country throughout.

Many garden clubs have been formed by the best ladies of the land who through personal application have gained a knowledge of plants and put into practice their ideas which have given us unlimited styles, from the quaint and old-fashioned formal gardening, with its boxwood borders and clusters of perennials of species long since obsolete, to the highest and newest order of rock, terrace, roof, and aquatic gardening.

Our strongest and most influential exponents of gardening and the care of flowers are women who have been enthusiastic, and have applied their skill with such profitable and gratifying response that they have given their experience through the pen and have enthused many anxious and willing students in the same direction; and while it might appear to some to be only a sport in a certain fad, the commercial horticulturist can testify that it has been an uplift to his business and is constantly increasing. Those who are connected with leading horticultural establishments have the opportunity to feel this upward tendency and experience a more direct association with those we style the active amateur horticulturist.

Suffice it to say, that none but a thoroughly experienced horticulturist can keep pace with and give the required information that is demanded by the average amateurs, men and women. Catalogues issued in the interest of horticulture are more comprehensive, instructive, and suggestive with each issue from year to year.

A commendable feature in the experience of all is to try out novelties of merit; it gives opportunity to become familiar with the new introductions and individually test for quality. The experimental feature in gardening is perhaps the most interesting, owing to the constant springing up of new things in all classes; it keeps up the effervescent anxiety to become acquainted with all new things.

There has been a great trend toward gardening with color schemes. This can be accomplished only when space will permit, as quantity is necessary to secure the color, and space for variation and effect; and unless one is fairly familiar with the blooming period the effect is spoiled by a portion of the plantings being either not in bloom or beyond that point, thus destroying the harmony of bloom at a period when most needed. The best way of overcoming these troubles is to have a space in a well cultivated garden large enough to hold a few specimens of each of the varieties in different colors and in different classes, noting the blooming period of the varieties and the variation of the same.

With all this close attention and study the period of perfection is short and the places taken by one variety and color show to greater disadvantage than were the spaces filled with plants of different species of the same color.

Those experienced in the use of seeds of annuals can do much better and get a much longer blooming period when annuals are used in connection with perennials. For example, in yellow, to begin with the opening of the season —

Doronicum and pansies would be the first.

Wallflower and eschscholzia the second.

Trollius, aquilegia, coreopsis, and calendula the third.

Hemerocallis, gladiolus, helenium, and hollyhock would be the fourth.

Marigold, hardy sunflower, zinnia, and gaillardia the fifth.

You will at once perceive that this can only be done where space is large enough to contain from three to five distinct classes, and planted in such way that with one variety blooming, to produce the whole effect in yellow, and this effect to continue from the beginning of the doronicum to the hardy sunflower and zinnia, which really run into the frost season, making the period from frost to frost. The same effect can be had with other varieties in pink, white, red, and blue. It must also be observed that the color block will not maintain the same height throughout the season. If the first period is to be yellow with pansies, it will be dwarf, and if with doronicum it will be from 18 to 24 inches high. The same would be true of other colors, but a choice can be made from a complete list of plants or seeds, divided up in color and height.

It is to be observed when seedlings are used that the seed is not to be sown in the show bed but in either boxes, frames, or borders, where they can be cultivated to the blooming size and then transplanted to the permanent place in the show garden, with the exception of poppies.

The following list is made up of varieties in color and height to give a good effect when used as named and in that portion of the border as the height will require:

For Borders.

Combination 1. Delphinium (Gold Medal Hybrids). White Phlox (hardy). Pink Phlox (Drummondi, annual). Alternated with pink Snapdragons.

Combination 2. Pink Hollyhocks. Pink perennial Phlox. Blue and white Campanula or Platycodon.

Combination 3. Digitalis, pink and purple and pink Physostegia. Blue Delphinium and Eupatorium. White hardy Phlox and Achillea the Pearl.

Plants for Back Row (Tall).

Hardy Asters. Bocconia, at intervals. Boltonia. Delphiniums (King and Gold Medal Hybrids). Digitalis. Eupatorium. Grasses. Heliopsis. Hardy Sunflower (Single and Double).

Hollyhocks. Japan Iris. Lobelia cardinalis. Physostegia. Rudbeckia. Tritoma. Thalictrum. Yucca. Mallows.

Medium Height.

Achillea the Pearl. Anthericum. Aquilegias. Campanulas (Tall growing sorts). Caryopteris (Blue Spirea). Cimicifuga (Snakeroot). Coreopsis. Delphiniums (medium heights). Euphorbia corollata. Helenium (Sneezewort). Hemerocallis. Japan Iris. Liatris (Blazing star). Lysimachia clethroides. Bergamot. Pentstemon. Platycodons. Sweet Williams.

Low Growing.

Achilleas (cut-leaved sorts). Anemones (Japanese). Chelone (shell flower). Shasta Daisy (Nipponicum types). Dielytra (bleeding heart). Eryngium (sea holly). Echinops. Gaillardia. Gypsophila. Hypericum. German Iris. Lychnis. Lupinus. Nierembergia. Oenothera. Dwarf Phlox. Pyrethrum. Saxifraga (Megasea). Sedum. Stokesia. Trollius. Veronica. Wallflowers. Pansies.

From the following list can be selected preferred species in desired colors, the numbers indicating their succession of bloom:

Red.

First. Lychnis. Poppies.

Second. Aquilegia. Digitalis. Hollyhock.

Third. Gladiolus. Dwarf Cannas. Geranium. Heuchera. Salvia. Phlox.

Fourth. Pyrethrum. Gaillardia. Zinnias. Tritoma.

Pink.

First. Stocks. Phlox subulata.

Second. Lavatera. Geraniums. Phlox (annual).

Third. Gladiolus. Hollyhock. Phlox (perennial).

Fourth. Sedum spectabile. Japanese Anemone. Geranium. Vinca rosea.

White.

First. Pansy. Alyssum. Phlox subulata.
Second. Pansy. Arabis. Candytuft.
Third. Alyssum. Iris. Stocks.
Fourth. Phlox (annual). Hollyhock. Vinca rosea.
Fifth. Phlox (hardy). Nicotiana. Euphorbia. Pyrethrum. Zinnia. Dwarf Dahlias. Geranium. Anemone. Hardy Aster.

Blue.

First. Phlox divaricata. Pansies.
Second. Aquilegia. Iris.
Third. Delphinium. Nemophila. Campanula. Cornflower.
Fourth. Stokesia. Veronica.
Fifth. Hardy Aster.

The following is an abridged list of favorite and leading species in their respective colors from which can be selected distinct colors and heights:

Yellow.

Eschscholzia. Calliopsis. Coreopsis. Gaillardia. Helenium. Hollyhock. Marigold. Tagetes. Wallflower. Calendula. Zinnias. Gladiolus. Pansies. Aquilegia. Doronicum. Heliopsis. Hemerocallis. Trollius. Hardy Sunflower.

Blue.

Campanula. Cornflower. Delphinium. Iris. Nemophila. Phlox divaricata. Hardy Aster. Stokesia. Veronica. Pansies. Aquilegia.

White.

Candytuft. Phlox. Alyssum. Arabis. Euphorbia. Hollyhock. Iris. Nicotiana. Pyrethrum. Stocks. Vinca alba. Zinnias. Dwarf Dahlias. Geranium. Pansies. Anemones. Hardy Asters.

Red.

Coxcomb. Hollyhock. Digitalis. Marigold. Poppies. Pyrethrum. Gaillardia. Salvia. Vinca rosea. Zinnia. Dwarf

Cannas. Geranium. Gladiolus. Aquilegia. Heuchera. Lychnis. Tritoma.

PINK.

Hollyhock. Phlox. Lavatera. Stocks. Vinca rosea. Geranium. Gladiolus. Anemones. Sedum spectabile.

To the amateur credit must be given for the widespread interest which has been awakened throughout the country in civic work. The American Civic Association owes much of the active work for which it gets credit to the horticultural amateurs among our American ladies. The forming of clubs and other organizations have been the means of interesting communities where civic pride was not known and where now the influence has been brought to bear upon the authorities to enact such laws as are necessary for the establishing of discipline against untidiness and neglect of home surroundings, protection of trees, urging uniformity in street regulations, etc.

These organizations promote the civic and moral welfare of home owners and the protection by every proper means of the mutual interest of individual householders, to safeguard their families, encourage home-makers, develop community spirit, and foster social intercourse. All of this has grown out of the individual interest of the amateur horticulturist; this contagion-like enthusiasm is easily contracted, and is wielding a widespread influence wherever introduced, because the results of minor efforts have been so very gratifying that it is impossible to do other than progress, and this we hold is a commendable branch of gardening for and by the amateur.

DISCUSSION.

At the conclusion of the lecture many questions were asked Mr. Thilow which were answered in a manner that showed his great familiarity with the subject under consideration.

Many of the questions were propounded by the ladies in the audience which led Mr. Thilow to remark that woman's interest in horticulture was having a great influence in the improvement of our towns and cities. Nine out of every ten of the organizations for

civic improvement throughout the country are composed of women and much good is being accomplished through their efforts in planting and protecting street trees, in establishing children's school and home gardens, and in calling attention to the desirability of tidiness around the home grounds. He said that horticulture is not a fad but a real thing and that children brought up in its environment become better citizens.

A lady inquired concerning the winter covering of perennial plants and also how to exterminate the cutworm.

The Lecturer replied that perennial plants had better not be covered until the ground was frozen, even if not until January, and the same was true of bulbs. If covered before freezing the ground is likely to be unevenly frozen and in places may become too moist.

The cutworm, as is well known, is nocturnal in its habits and is especially destructive after a hot day. There is a preparation containing corrosive sublimate which will kill the cutworm but it is too expensive. A simple and effective remedy is to mix a preparation of cornmeal or bran, softened with molasses and water, to which is added a few tablespoonfuls of Paris green or arsenic. Lay this on leaves or pieces of wood, or scatter it about the plants in the evening. To avoid danger of poisoning birds or domestic animals it would be safer to cover the poison with a board.

The Lecturer said that there was another pest that was very troublesome in strawberry growing. It was the white grub, the larva of the May beetle or June bug, which eats all around the roots and is a difficult insect to reach by ordinary means as it burrows deep in the ground.

Samuel H. Warren said that he had grown strawberries for 56 years and had had much experience with the white grub, so troublesome to strawberry growers. The grub is most plentiful in newly plowed grassland. Grass roots are their food before the sod is turned and it is not advisable to plant strawberries on such land for a few years until these bugs are eradicated.

Fall plowing has been recommended but as the bug goes below the frost line in freezing weather he has found that method ineffectual. He has found that picking them out by hand during frequent plowings of the ground had rid his garden of them. There

was also a parasite that lays its eggs on the white grub thereby destroying great numbers of them.

Questions were asked concerning the value of lime and nitrate of soda in cultivated ground.

The Lecturer replied that lime is not a fertilizer but is often useful on soil that has become sour through an excessive use of barnyard manure. It eliminates the impurities and rejuvenates the land. Thirty to forty bushels to an acre should be used and harrowed in in the early spring.

Nitrate of soda is a food for growing plants only. It is expensive and wasteful to apply it to the ground before you have plant life. Use a tablespoonful of nitrate of soda to a gallon of water while the plant is growing.

In answer to a question as to the best fertilizer for a light, sandy soil with gravel underneath the Lecturer recommended sowing with clover, cow peas, or vetch, which when plowed in added humus to the ground.

In regard to the planting of sweet peas he advised planting either at the beginning of winter or the opening of spring. Plant in a trench four inches below the surface. When the peas come up after the freezing of the ground they will have more wood and larger blooms; but do not plant them in the same spot each year. In California they can grow a crop year after year, but not here. They convert the soil a little each year and plant again. Sweet peas have to be hybridized by hand and in Europe and America new varieties are being introduced constantly by hand hybridization.

The question was asked how to rid the squash of the borer. The best way was to get borer proof vines which he said could be obtained, otherwise use tobacco dust, pyrethrum powder, etc. The little borer which destroys the squash vine has its breathing apparatus under its wings and on the hottest days in summer they breathe the fastest, so if you freely sprinkle the vines with these powders you will rid the plants of a great many.

A lady inquired the cause of a clematis vine suddenly wilting and dying down to the ground, almost in a single day.

The Lecturer replied that this was sometimes caused by the sun shining directly upon the lower part of the plant and upon the

roots on the surface of the ground, causing them to burst. He advised planting something around it to protect the plant from the sun's heat and to shade the ground. He said also that there was an insect which bores its way into the root just under the surface of the ground and causes the stems to die right down. In that case the plant should be cut down just below the surface and left to grow up again and make new and stronger shoots.

For the cabbage worm he recommended spraying with kerosene emulsion and for the black fungus on Delphiniums, dry Bordeaux or sulphur and lime.

THE LOCAL PLANT DOCTOR.

By Prof. H. H. Whetzel, Ithaca, New York.

Delivered before the Society, with stereopticon illustrations, January 21, 1911.

The John Lewis Russell Lecture.

The study of human diseases began in the misty days of prehistoric times. Even among savage tribes the "medicine man" has been an important and powerful member of the community. The study and treatment of animal diseases (Veterinary medicine) is by no means a modern science, but the study of diseases in plants has been developed almost entirely within the last 60 years. Human ills have called forth the development of one of our most important and powerful professions. This great army of trained physicians and surgeons, constantly recruited from our medical colleges, work night and day to relieve our aches and pains and stay the spread of contagious diseases. The humblest citizen has at his call the immediate services of a general practitioner or expert specialist. The farmer or stockman no longer depends upon his own limited knowledge for the treatment of his sick animals. Even that voluminous "horse doctor book" which used to occupy so prominent a place along with the family Bible on the center table of his father's home, has been carried to the garret. He has learned that it is more profitable to depend upon the skill of the professional Veterinarian at the village, than to try to treat diseases and apply remedies, the nature and effects of which he too little understands.

The rise and development of Plant Pathology has come relatively late in the history of the race. In fact, Plant Pathology as a distinct profession can scarcely be said to have more than just appeared in our economic system. So far as I know, only two institutions in this country at present maintain distinct teaching departments

of Plant Pathology, namely, Cornell University and the University of Wisconsin. Some of our experiment stations have, within the last four or five years, appointed to their staffs investigators with the title of Plant Pathologist. Nowhere, so far as I know, have trained men gone forth to practice the profession of Plant Pathologist as do our doctors or veterinarians. The delayed development of this field of professional service is, it seems to me, but a natural phenomenon in the evolution of our economic civilization. Human medicine developed early and has been pushed forward with such mighty strides, chiefly because of the natural desire of the human individual for self preservation and perpetuation. It has called forth the highest type of scientific endeavor and professional heroism, chiefly because of the human element involved. That animal pathology should have been the next to receive consideration is natural. Recognizing the close relationship between himself and the animals that serve him, it is but natural that man should early have sought to treat their wounds and relieve their sufferings. Another and not unimportant factor in the development of animal pathology was its economic importance. The loss of a horse, a cow, or a dog is often a calamity. Upon the life and health of his animals may depend the worldly prosperity, in fact, even the existence of the owner himself. This has been an added and sometimes a most potent force in impelling the careful study of animal diseases and their control.

Plants represent the other type of life expression different from that of the animal kingdom of which man himself is the highest development. He has, therefore, looked upon plants from quite a different point of view from that with which he has regarded his animals. Unlike the horse, the cow, or the dog they have seldom been his servants, rarely his companions. He regards them as so much material, to be chopped, reaped, eaten, burned, or trampled upon, often less to him than the rocks of the field or the ore of the mines. The ease and readiness with which new plants may be grown to replace those he has eaten or wasted, their great abundance and variety, and their helplessness before his onslaughts, have demanded of him little respect or consideration. Since their ways of manifesting injury, sickness, starvation, and death are so different from his own or his animals, their ills have not appealed

to his sympathy or philanthropic nature. It is only as population increases, and the thoughtless waste of his lands becomes appallingly evident in the rapidly disappearing lumber supply, depleted soils, and reduced crop production, that diseases in plants begin to demand his careful consideration. It is the economic features of the case alone that appeal to the plant producing public. Occasionally there appears a man who would save the plant for the plant's sake. This is the rare exception. With most of us it is a question of whether it will pay or not. As I see it, then, the very recent rise and development of Plant Pathology as a science and profession is but a logical sequence in the world's economic evolution. All the lands of the earth are discovered and possessed. There are no more great tracts of virgin forest to yield us unlimited timber supplies, and no great unplowed continents to grow the grain for teeming millions soon to be born. Conservation is the war cry of the world's economists. We shall nurture and develop the science of Plant Pathology, we shall train and send forth a great army of practical Plant Pathologists and trained experts, solely for economic reasons; simply because it will pay.

But Will It Pay?

Some of you, most of you, in fact, may doubt whether the development of a great number of professional plant pathologists is actually warranted by the economic losses from plant diseases at the present time. Are the annual losses to our crops sufficient to maintain a corps of such high-priced servants and still pay a good profit on the investment? A glance at some of the well established facts as regards losses from plant diseases and insect pests will, I think, serve to convince us on this point. Under the direction of Mr. F. C. Stewart, of the N. Y. State Experiment Station, extensive experiments have been conducted by a considerable number of potato growers in the State of New York, during the past seven years. These experiments have shown that the potato growers of that state are losing annually an average of 50 bushels to the acre. This loss may be saved by spraying which they themselves can do at a cost not to exceed $5.00 per acre. Experi-

ments carried out under Mr. Stewart's immediate supervision showed that the average annual loss, which the direct supervision of a trained plant doctor might eliminate is over 100 bushels per acre. An exceedingly small percentage of our potato growers spray at all, and few or none with that thoroughness or effectiveness which should certainly result, under the immediate direction of a specialist in potato disease control. On a basis of average acreage, yield, and price, this represents a total annual loss to the potato growers of New York of approximately $10,000,000, a loss which they themselves, by the application of known methods of spraying, could save or an annual loss of about $20,000,000 which might be saved by the employment of expert plant pathologists to direct their potato disease control work. The average annual loss from the loose smut of wheat in New York is not less than 5% of the crop of wheat each year. Yet a practical and effective means of saving this loss could be worked out and applied by properly trained experts in the field. While it is difficult to get reliable estimates of the annual losses from diseases of fruit and fruit trees, one has only to compare the yield and quality of apples from sprayed and unsprayed trees, season after season, to realize the tremendous losses from apple scab and codling moth, or from peach rot and curculio. Little peach and peach yellows, collar rot and root rot, crown gall and many others of like nature, continue year after year to take unchecked a heavy toll from our plant resources. The control of these maladies would swell tremendously the gigantic annual crop production of this country. Wherever a thorough and practical study of such a disease problem has been made, it has almost always resulted in the discovery of an effective, practical, and profitable method of control. One of the greatest leaks in our modern agricultural business is that from pests and diseases. It is a loss of gilt edged profits and the saving of it adds but very little to the cost of production, even with the expense of an expert to stop the leak. It certainly will pay to train and maintain, at the direct expense of the grower, expert plant pathologists.

How are these Experts to be Trained and Maintained?

Not, I believe, as we now train and maintain our local physicians and veterinarians. I think the character of the problem before us, if it does not actually forbid such an economic development, at least permits of a more satisfactory and rational one. The primary object of the plant pathologist is to prevent diseases, not to cure them. The plant doctor should be a public servant supported in part, at least, by the local growers. He must see, in his position, the same opportunities for scientific investigation and pecuniary advancement, the same chance for place and influence in the agricultural affairs of the State as his colleagues in the experiment station and colleges. In fact, I believe, he should be, in some way, directly connected with such state institutions. In short, the growers must meet the state at least half way in the training and support of experts for the solution of their plant disease problems. I believe we have made some progress in this direction in the State of New York. Already eight industrial fellowships have been established in the Department of Plant Pathology by growers and commercial firms interested along the lines of plant disease control. These each provide for salary and expenses for young men to take up the investigation of the diseases of certain crops or particular lines of disease control, fungicides, etc. These fellowships represent financial coöperation between the grower or manufacturer and the state, through the college which furnishes the necessary laboratory equipment, training of the men, and competent supervision of their work.

The work during the growing season is conducted in field laboratories in different parts of the state where the particular disease problem can be studied to best advantage in the orchard, the field, the garden, or the greenhouse. The grower not only has the advantage of seeing the problems solved in his own locality but has the special advantages of the young plant doctor's advice and supervision in his spraying and other disease control operations. During the winter, the young pathologist studies at the university and continues his investigations on the problems to be grappled with in the field the next season.

The result of this scheme of training and developing specialists

on the diseases of crops has thus far been most satisfactory and congratulatory. It is expected that it will require from three to four years to complete the training of these young plant doctors. They devote at least eleven months of the year, in most cases, to such study and investigation. That means from four to five seasons in the field, in intimate relation with the crop, the diseases of which they are working to control. They get practical experience. At the end of this period they receive their Ph.D. degree, if their scientific attainments warrant it, and as expert pathologists are ready for their life work. They are high class, expensive men. Where are they to find their opportunity for a livelihood? I answer: in that locality, county, or state where they were trained. They are worth more to those growers with whom they have lived, for four years, than to any one else and those growers will retain them as experts on the diseases of their particular crops. Our plan is that they shall be maintained by groups of growers as their expert on our staff, the state providing facilities for these men to continue their labors for the benefit of the growers of the state.

Some Results.

If it is true that the proof of the pudding is in the eating, it is equally true that the proof of this scheme is in the results obtained. The most convincing proof of the success of the plan is the constantly increasing demand of the growers for more of these field-laboratory-fellowship coöperations with the College. Not only in Plant Pathology but in economic entomology as well are these fellowships being established.

You will better appreciate the value of these young experts if I show you some of the results which they have obtained for the growers of the state. I shall select the work of two of our men.

The Lime–Sulfur Investigations.

The serious injury to the fruit which so frequently results where bordeaux is used in the control of apple scab convinced our growers that some substitute equally effective but less injurious must be

found. The report of remarkable results with lime-sulfur in some of the western states brought from our apple men an insistent demand that we give them some definite data on the subject. Manufacturers of concentrated lime-sulfur solutions were urging its use as a summer spray. We of course refused to recommend it without sufficient evidence as to its safety and reliability. With no special funds at our disposal we were unable to press the investigations. The establishment of the Niagara Sprayer Company Fellowship in the spring of 1909 enabled us to put a man on the problem at once.

A field laboratory was established and has been maintained during the growing seasons of 1909 and 1910, right in the orchards in a different locality each year. The results obtained by Mr. Wallace, the holder of the fellowship, are best shown in these slides. I leave it to you to judge whether his work has been profitable or not. (Series of lantern slides were shown illustrating some of the results obtained.)

Apple Scab.

Important Facts which have been established in regard to Apple Scab.

1. The apple scab fungus winters only in the old apple leaves on the ground; not in the twigs on the tree. The early application for scale and blister mite is not usually effective against scab and cannot safely be substituted for the application to be made just before the blossoms open.

2. The application just before the blossoms open protects the foliage, and often insures a set of fruit. This application was especially necessary this past season.

3. Proper spraying just before the blossoms open (that is when the color shows in the buds), by eliminating scab infection, prevents burning of the foliage by the application to be made just after the blossoms fall. Mr. Wallace has shown that scab infected foliage is much more seriously injured by lime-sulfur or bordeaux than is foliage which is free from scab spots.

4. The application just after the blossoms fall is usually the one which gives clean fruit. The fruit at this time is usually infected by the conidia from the scabbed leaves about them which

were infected just before the blossoms opened, by the ascospores from the old leaves on the ground.

5. *That late infection* which often ruins the crop just about picking time may be prevented by a late application (that is, when the fruit is about one-half or two-thirds grown).

6. Spray *just before* rain periods, not after them. The spores of the scab fungus are distributed, germinate, and infect the leaves and fruit only during rain periods. *Watch your weather map!*

7. The development of the buds and fruit, and the character of the weather must be the guide in spraying for apple scab. The character of the weather during the season will determine very largely how many applications are to be made. Some seasons one application alone, will be sufficient, as was the case last year (1909). Other seasons, four applications must be made if a perfectly clean crop is to be obtained.

Lime-Sulfur as a Summer Spray.

1. Evidence shows that lime-sulfur is equally efficient with and safer than bordeaux mixture for the control of apple scab.

2. The fungicidal value of lime-sulfur is not due to the soluble sulfide of the solution directly, but is quite certainly due to substances derived from the oxidation of the free sulfur which has resulted from the drying of the solution on the leaves. That the soluble sulfids are not the active agents has been clearly proven by Mr. Wallace by the simple experiments of precipitating lime-sulfur with carbon dioxid and then, by tests, showing that it was exactly as efficient when sprayed on trees as was the unprecipitated solution.

3. The fungicidal value of the lime-sulfur solution is *increased at least 50% by the addition of arsenate of lead at the rate of two pounds to fifty gallons.* This is one of the most remarkable discoveries which Mr. Wallace has made. You will remember that we were told two years ago that the addition of arsenate of lead to the lime-sulfur solution could not be made as it would destroy the value of the lime-sulfur and decrease the effectiveness of the arsenate of lead as an insecticide. By an ingenious laboratory

test, together with confirming experiments on the trees, Mr. Wallace has shown that exactly the reverse is true as regards the fungicidal value and in his experiments it has been uniformly proven that the codling moth is almost perfectly controlled when this combination is used. In other words, lime-sulfur plus arsenate of lead has much more fungicidal value than lime-sulfur alone and is at least as effective an insecticide as when lead arsenate alone is used.

4. The burning qualities of lime-sulfur are actually reduced by the addition of arsenate of lead and not increased as we were told would be the case.

5. Arsenate of lead is the only fungicide which, so far as we know at the present time, may be used with safety in the lime-sulfur solution. Arsenite of lime, so highly recommended and urged by some investigators last year has proven, not only in our experiments this season, but in the experiments of others in widely separated parts of the country, to be entirely unsafe and especially dangerous to the foliage.

6. The addition of lime or the presence of sediment in the lime sulfur does not appear to materially affect the burning qualities one way or the other.

7. Precipitation by carbonic acid gas (gas sprayer) does not reduce the fungicidal value of lime-sulfur when used alone or of lime-sulfur with arsenate of lead added. It tends to increase the arsenical injury by setting free some arsenic, when arsenate of lead and lime-sulfur are used together. This is especially injurious to peach foliage.

8. The soluble sulfids in the lime-sulfur solution are not probably a factor in causing russeting of the fruit. The russeting which appeared on the lime-sulfur sprayed trees this season was very probably due to the wetting of the fruit merely, since unsprayed trees in the same orchard have been, in all cases observed by us, practically as badly russeted as the sprayed trees. In fact, in our own experiments both last year and this, lime-sulfur sprayed trees have had less russeting of the fruit than the unsprayed trees beside them. Cordley as a result of his observations this season holds that under certain conditions lime-sulfur is responsible for russeting of fruit.

9. Magnesium oxid (found in magnesium lime) has considerable fungicidal value. Used alone it is not an especially good fungicide for apples as it does not stick well.

10. The value of the sediment in the lime-sulfur solution seems to depend directly upon the magnesium oxid content. Mr. Wallace found, by simple laboratory tests, that the sediment in the Niagara Heavy Grade has about 50% as much fungicidal value per volume as the clear solution. That is, the precipitate filtered out from the clear solution thoroughly washed with clear water, and then diluted at the rate of 2–30, when sprayed on Greening trees, gave approximately as large a percentage of fruit free from scab as did the clear solution used at the rate of 1–30.

11. Lead arsenate alone was found to have marked fungicidal value, especially in the tests on the trees. This, Mr. Wallace believes is due, to a large extent, to its spreading and sticking qualities.

August 5 and 6, 1910, at the summer meeting of the State Fruit Growers' Association, over 1000 growers saw the results of these experiments right on the trees in the orchards near Sodus, N. Y. B. J. Case, President of the Fruit Growers' Association, in whose orchards some of these experiments were conducted, declared that if the fruit growers of that locality would retain Mr. Wallace, as their local plant pathologist, he would save that town $50,000 the next year.

Control of the Fire Blight in Nursery Stock.

For many years nurserymen in central New York have lost more or less heavily from fire blight in their blocks of pears, apples, and quinces. By a coöperative arrangement with the Department of Plant Pathology, in the spring of 1909, the C. W. Stuart and Co., nurserymen, provided for one of our men to undertake the study and control of this malady in their nurseries. The young man had never seen a nursery before going on the job, but he had good scientific training, the result of four years of conscientious work in college preparing himself for the profession of plant pathologist. He was given to understand that upon his efforts and results in

that nursery that season depended future opportunities to get advanced training in his chosen line. It was distinctly up to him.

When he came to the nursery in June the disease was already well established in a block of quinces and was spreading into the pears. By systematic and untiring efforts this young fellow regularly inspected about 130 acres of nursery stock from one to three times a week, wiped out the blight already established, and promptly suppressed several new outbreaks of the disease. He discovered that the bacteria were spread chiefly by the aphis and with a crew of Italian laborers, armed with whale oil soap in dippers, dipped every aphis infested block of apples, pears, and quinces and effectually stayed the progress of the disease. By systematic inspection, he was able to detect the disease in the tips of the young shoots before it reached the body of the tree and so, by cutting out the diseased shoot and disinfecting the cut with corrosive sublimate, stay its further spread and save the tree. He kept an accurate record of all trees removed (because too far gone to save) and a record of all trees saved by prompt removal of diseased shoots. This table shows the results for the season.

	Apples	Pears	Quince	Total
No. of trees from which blighted shoots only were removed	834	32	1451	2317
No. of trees entirely removed.	83	7	256	346

Not only did he save the company these 2317 trees which they would certainly have lost but he indirectly saved at least as many more by preventing the general spread of the disease. So satisfactory was his work that at the close of the season the company established a fellowship for him in order that he might continue to investigate this and other diseases of nursery stock. So well had he done his work of eradication during 1909 that none of the disease was carried over for 1910, and while a few infections were brought in to some blocks late in the season, they were easily and promptly suppressed with insignificant losses.

Conclusion.

But why retain these experts permanently? For the same reason that we retain our physicians, our surgeons, our veterinarians. Because new diseases and epidemics of old ones will be constantly appearing. It requires the training and experience of men who make Plant Pathology their business, to successfully and profitably cope with these. The grower will never learn the technique of plant pathology any more than he will that of veterinary medicine, and he will soon learn that it is not only necessary but highly profitable to pay for the services of expert plant doctors. There will be a constantly increasing demand for the professional plant pathologists in the conservation of our crop production.

Discussion.

The encouraging feature of Prof. Whetzel's lecture was that the various plant diseases can be prevented or controlled by proper and educated attention, which is greatly aided by the scientific researches carried on by the agricultural colleges and the several state experiment stations.

There is a growing belief that lime and sulfur, with a small addition of arsenate of lead, are the best and most effective fungicide and insecticide yet developed. Bordeaux mixture, hitherto relied upon, has been found not wholly satisfactory, especially on fruit trees, because of its injurious effect in the russeting of the fruit.

Other points brought out in the discussion are herewith briefly noted.

Fire blight of fruit trees. This blight is carried by insects. They deposit the bacteria in a wound on the tree and it is only by constantly inspecting and taking out the diseased portion that it can be got rid of. Cut about four inches below the infection and disinfect the cut with corrosive sublimate of a strength of 1 to 1000.

Commercial and home made lime-sulfur. Home made lime-sulfur, if made properly, is exactly as good as commercial lime-sulfur. It can be made more cheaply at home, and there is no

particular advantage in the commercial preparation and not much difference in the various brands.

The cucumber wilt. A good deal of trouble comes from the cucumber vines wilting and dying down almost in a day. This wilt is a bacterial disease and is carried by squash bugs and beetles. The bacteria are introduced into the veins and gradually spread over the whole leaf. The best remedy is to get into the garden the first thing in the morning and crush the beetles on the leaf, then take out the diseased leaves and burn. Spraying is of no value whatever.

Cedar rust on quinces. The cedar rust on quinces comes so very seldom, about once in every ten years, that there have been no particular experiments in regard to it.

Anthracnose of beans. Bean seed in the market is never without disease. The only way to get clean seed is to pick it out yourself. Buy the variety you want to grow, plant and save the pods which have no spots on the sides. Select and plant the seeds back in the garden. The disease is not in the soil, it is in the seed. The fungus consists of spores produced at the surfaces of the black spots. From clean seed you can get clean crops. Avoid working when it is wet and you will get less anthracnose. After a heavy rain or dew the spores may easily become attached to insects which carry them to the healthy plants. There is no uniform difference in the susceptibility to this disease of wax beans and green beans.

The question was asked if soaking bean seed in formalin or corrosive sublimate would rid them of anthracnose. To which the Lecturer replied that this treatment was not very satisfactory. The fungus is inside the seed coat and while soaking may be of some help, still the anthracnose is inside the bean. To get good results and to wipe out the disease the best way was through the careful selection of good clean seed.

Mildew of gooseberry. Potassium sulfide or lime-sulfur diluted 1 to 30 should control the mildew on the gooseberry.

Mildew on roses. The lime-sulfur spray ought to prove as effective as any fungicide.

The rust on hollyhocks. The spores of the hollyhock rust are produced very abundantly and so it is necessary to spray frequently with Bordeaux mixture. Cut off the diseased leaves in the fall

and destroy them. The fungus is carried over by the common round-leaf mallow so it is desirable to eradicate all these plants in the vicinity.

Treatment of soil to eliminate disease germs. Steam sterilization of the soil has given good results in the destruction of disease germs and injurious insects. Also the use of formalin can be recommended; one part to one hundred, sprayed on with a sprinkling can, a gallon to the square foot. Carbon bi-sulfide kills insects in the soil, but formalin seems to be as effective as anything against fungi.

NEW ENGLAND MARKET GARDENERS AND THEIR COMPETITORS.

By Prof. L. C. Corbett, Washington, D. C.

Delivered before the Society, with stereopticon illustrations, January 28, 1911.

It is indeed carrying coals to Newcastle to say to an audience living in the environs of such a virile center as Boston that this is the great commercial era of the world's history. Never before has the production of the world's food supplies been so important a matter as today. The great staples like corn, wheat, and rice have long been important commodities in the world's markets, but it is only within recent years that products of the market garden and truck farming have come into the commercial horizon. The reason for this is to be found in the tremendous increase in our urban population. The ratio of producers to consumers has changed remarkably in the past twenty years. This change has created a demand which is ever increasing. It is this demand for wholesome, fresh products of the field and garden which has made possible our present market garden and truck farming enterprises. Another important factor which we must not forget is the part which modern transportation has contributed to both the cities and to those who feed them. Without adequate transportation the cities could neither be established nor fed, and without facilities for the rapid movement of immense quantities of highly perishable products which we now have the markets would be but meagerly supplied with many of the luxuries which have come to be regarded as necessities. Without rapid transportation there could be no competing truck industry, and without the truck industry the cities would be fed from the local gardens and greenhouses. As a result of opening the doors of our markets into the gardens of the South the normal season for many of our vegetables has been obliterated.

But for this, each crop would still be anticipated as was the condition fifty years ago. As a result of all this change, we think, we have competition between the market gardeners, who are the growers living within the range of the wagon haul of a city, and the truck farmers, who are the extensive producers of a few staple articles, often only one or two, who live at considerable distance from the centers in which their products are consumed. I have defined these two industries because I consider them distinct and natural outgrowths of modern economic conditions.

Those engaged in market gardening feel that because truck farming is a more modern development that it is an encroachment upon our field, but is this the case? Can the market gardens supply all the potatoes, cabbage, celery, onions, kale, and spinach the markets demand the year round? These are the crops on which the great truck industry of this country is chiefly based.

Let us briefly review the economic status of some of the more important truck crops which form the basis of the real or supposable competition between the market gardener and the truck farmer.

The potato industry of the country stands fifth as a wealth producer in the category of the nation's crops. The early crop is the only phase of this industry that can in any way affect the market garden. It is never mentioned as a competitor yet it is the greatest of all truck crops.

Cabbage is probably second in commercial importance of the crops grown by the truck farmer. But this is one of the cheaper and coarser products of the garden. The extra early crop will continue to be grown at the South and the great winter supply by the farmers of New England, New York, Wisconsin, and Colorado. The more refined members of this family of plants such as brussels-sprouts, kohl rabi, and the fancy cabbages of the savoy and red sorts will likely continue to be products of the market garden. In making this explanation I have suggested the lesson of my theme, i. e., that the market garden is the place in which the refined vegetable gardening is to be done.

Take for instance the onion industry. The large field crops will continue to be produced in Massachusetts, Connecticut, New York, Ohio, Texas, and California, but the potato onion for early bunchers will probably ever continue to be a factor in the market

garden. There is usually some side line or refinement of each crop which is better adapted to the conditions of the market garden than the truck farm.

Tomatoes are an important crop, not only with the truck farmers of the South but with those of Maryland, Ohio, Indiana, and New York, where immense quantities are annually produced for canneries. The early southern crop comes into competition with the spring crop under glass to a considerable extent, but the Cleveland and Ashtabula growers maintain that this competition is not destructive. The house grown product outsells the southern field product in the same market. The growers have seen to it that their customers were taught to discriminate between the vine ripened house grown product and that ripened in transit from the southern fields. They are further fortifying their industry by growing under glass special types of tomatoes not produced in the field. The house grown product differs in color, size, texture, and flavor. These points of difference are carefully pointed out as the reason for the higher price. This is perfectly legitimate. There is a place for the southern product in the market, but it should not be a competitor of the house grown fruit. If it is it is because the market has not yet become discriminating. A little educational work on tomatoes is needed in that market, and that is the grower's task.

Let us consider the cucumber situation. This crop is extensively grown by truck farmers both in frames and as a field crop. The season of the frame crop overlaps that of the northern forcing house product to some extent, but as it costs a great deal to produce the frame crop and as it only overlaps the house crop for a short period it is not a formidable competitor; but why be content to have it a competitor at all? We have based our whole cucumber forcing industry outside the New Orleans district on the White Spine, the great American *field type* of cucumber. Why not make the cucumber forcing industry distinctive as it is in England. If the English sorts do not suit our markets make new ones that fit American conditions, but which are as distinctive as are the English forcing type. This will solve the problem of competition once and for all. I have never thought the White Spine the ideal forcing cucumber. It shows its age in the market too soon. It is too

perishable for the effort it costs. The ideal forcing "cuke" is one which can be marketed as soon as large enough regardless of its age; one which remains a long time on the plant without ripening and one which does not age quickly in the market.

Our growers and market men tell us that the English fruit does not take in our markets. How do they know? Has the market ever been tested? So far as I know the only market in the United States to which these fruits are offered is New Orleans and there they sell readily. Is not this suggestion worth our consideration? We think it is and have set as one of our tasks the finding of a sort which possesses these desirable qualities.

But everyone has been impatient lest I forget lettuce, the great forcing crop of America, and Boston the market which has set the standard for this crop. Boston gardeners have adopted as their forcing sort the variety which thrives best in the open. Perhaps this is the result of chance, but I dare say that the evolution of Big Boston or Hittinger's Belmont Forcing lead along a line of ancestors that came first from the open into frames and hotbed and finally into the forcing house. To begin with it was the best and toughest outdoor lettuce. It is not a child of the greenhouse except by adoption. In growing it in the field the southern growers are only taking advantage of the sorts and markets which you have for years been preparing for them. As long as there was no field crop in Florida and no frame crop about Wilmington, Newburne, and Norfolk this dual type lettuce was satisfactory. It served the gardener better than two sorts, one distinctly a *forcing variety* and the other a *special outdoor sort.* But conditions have changed and with the change a new problem is presented to those growing lettuce under glass.

The problem as I see it is that of finding a special sort for each particular purpose. Since we have prepared a dual purpose lettuce which thrives equally well in the open and under glass, if we are to continue the cultivation of this sort under glass, it must take on some distinctive mark or character when so grown which cannot be acquired in the open.

We have reached the stage in our plant work which was reached many years ago in animal industry. We have, as it were, need for a milk producing breed and a butter producing breed. In the

animal world this was solved by evolving the Holsteins on the one hand and the Jerseys and Guernseys on the other. Our lettuce problem is the same. But the unfortunate part of it is that we have built up our butter business on a beef breed.

The horticultural literature prior to 1850 is full of references to the culture of lettuce both in the open and in the frame and hot-bed. The variety discussions of the time substantiate the statements I have already made that the favorite lettuce of the Boston market came from an ancestry which had qualities fitting it to endure trying conditions. The success in the open at the South of the varieties you have produced is only a verification of the general purpose character of these lettuces.

I am sorry that we are confronted by a condition so serious as this really is, but we should not be discouraged or lose hope. There are other centers in the United States successfully producing lettuce under glass which do not feel the competition of the outdoor crop. Perhaps their success holds a suggestion. Let us at least take an inventory of their situation. West of Pittsburg the lettuce forcing industry is founded upon a different type of lettuce from that grown about Boston. This lettuce is the product of the forcing house. It is not at all adapted to outdoor conditions, in fact, it is one of the most uncertain lettuces for outdoor planting. Special care must be exercised to secure germination of this sort in the field. It will, therefore, probably never be a popular outdoor sort. Its progenitors are fairly good field sorts the same as is the Black Seeded Tennis Ball from which your own heading sorts have originated. If you were producing in your forcing houses a sort which did not thrive well in the open or was in some particular decidedly different from the outdoor crop, your forcing industry would be on a much safer basis. This is what the western growers possess in their bunch or cutting type of lettuce.

A year ago in speaking before the Market Gardeners' Association I ventured to suggest some of the advantages of this loose quick growing type of lettuce which is used by our western friends. I wish to *more emphatically* bring this matter to your attention at the present time. As I have already said, this lettuce is distinctively a forcing lettuce. It grows more quickly than does the sorts which are produced in the region about Boston. Four crops

instead of three can be grown during the winter season and, while as a rule, it does not command as high a price per plant as does the well-grown head sorts, it can be planted closer on the bench, and the fact that another crop can be harvested in practically the same period makes it a more profitable crop than the one now chiefly handled by the Boston growers. But you will say, "we are confronted by market conditions of long standing which have been built up after many years of careful work on the part of our growers. It will be a difficult and very expensive operation to bring the market to substitute this loose grass for the type which it has grown to consider as of highest quality." I appreciate all this, but I believe that in the long run the forcing house industry will be better off to gradually make the change.

I wish to tell you something of our own experience in this work. Three years ago when we first offered the loose lettuce to the Washington market, all dealers and marketmen said that they could not handle this type of lettuce. They could not handle it because they had never had any of it to handle, they knew nothing of it. They were making assertions without any evidence. We induced one man to take our product and offer it to the trade. We did not do as I would advise you to do, *make a specialty of the new type of lettuce with some of the leading restaurants or hotels of the city.* Our hotel and restaurant people, however, were not long in finding this product and only a few experiences demonstrated to them that the general public would eat the loose lettuce quite as readily as any other, that it was quite as satisfactory for garnishing as the head lettuce, and, that it is very much more economical for them to use. The statement that I am going to make is not a very elegant one, but it emphasizes what I wish to impress upon you. I believe the loose lettuce of the Grand Rapids type is more profitable to the consumer, particularly the boarding house and restaurant keeper than any type of lettuce grown. He can make more show for his money with this lettuce than with any other type produced. You will at once realize that this is a great factor with people who have the problem of garnishing their table and at the same time placing before their patrons an attractive and acceptable menu. The result is that while it was difficult for us to move this type of lettuce in the Washington markets in the beginning, after

the first crop was disposed of the second crop was anticipated by telephone orders, and this has been the condition ever since. Our crop has always been solicited before it was ready for market. There are no other growers about Washington who are producing this type of lettuce, and that which we have been growing is the only product of this kind offered to the Washington trade.

The experiences of the Cleveland and Ashtabula growers correspond exactly with our own except that they have never felt any competition between the house product and the field grown product of the South because the two were very distinct in appearance and character. The house grown product has, as I have already suggested, many good points and these the dealers in the markets to which the Cleveland and Ashtabula people cater have been careful to keep before their customers. I do not mean by this that they have talked down the southern products. It too has a place in the market the same as the forcing house product, but there has not been competition between the two types. The forcing house product should be *early*, easily handled under glass, of high quality, and sufficiently distinct from the field grown sorts to attract attention and sell for a higher price in the market.

This gives me an opportunity to again repeat my text that it is the task of the market gardener to refine horticulture, and to produce distinctive products which are not generally produced by the truck farmers of the country who can, as a rule, produce large quantities of the standard vegetables more cheaply than can market gardeners. Instead of trying to win in a competitive undertaking let us rather win our financial success by growing a distinctly different type of product than that grown in the open.

The work that we are doing at the Department of Agriculture along this line has for its object furnishing the foundation on which such a distinctive industry may be built up. It is our desire to place the forcing industry and the field industry on different foundations. To develop a group of varieties which are distinctive forcing sorts and another group which are equally as distinctive field sorts. This we believe to be the simplest way of overcoming competition and maintaining both industries. We are at present engaged in determining the sorts which are distinctly adapted for forcing conditions. We are endeavoring to improve the quality

of the seed of those sorts so that those who wish to engage in the production of such specialties may call upon us for a small quantity of stock seed from which to produce their own crop of seed. We do not anticipate growing seed in a commercial way. All we hope to do is to maintain small plantations of distinctive strains of field and forcing house products from which commercial growers may secure sufficient stock seed to enable them to grow seed for commercial purposes.

The only thing we ask is a pledge of good faith, good cultivation, and an honest endeavor to keep the strains pure, but if for any reason the seeds become mixed or lose cast the grower should return to headquarters for a fresh supply of stock seed.

Our endeavor is to maintain the strains true to type from year to year, so that growers in any locality using these strains of seed will be able to offer to the market, provided the cultural conditions are the same, a product of the same grade each year. This we anticipate will work a revolution along some lines which will probably be slow and may cause some little inconvenience, but eventually it will be to the advantage of the industry.

The outdoor sorts with which we are working will be handled in exactly the same way. We are endeavoring to produce strains which are uniform in character and which come so true that one using the seed will be justified in expecting 95 per cent of the product to be identical in character. In the case of cabbage we are endeavoring to overcome the heavy annual loss, amounting in many cases to 40 per cent or more, from the admixture of late sorts or those off in type, from shooting to seed and from lack of uniformity in the period of maturity of the predominant type in the mixture. For at best most of our so-called varieties are only mixtures. They are not even worthy the title of a homogeneous mixture unless we were to admit that the homogeneity consists of a conglomeration of all possible types. Some of the commercial truck fields one sees would make him a convert to this belief. The aim is to place at the disposal of the trade as well as to the growers stock seed from which they may hope to grow a crop that will produce 95 merchantable heads from every 100 plants set in the field, all of which can be harvested in two cuttings. This should ultimately come to be the government standard for all

important commercial sorts. This is the aim and object of one of the lines of work which we are pursuing for the benefit of the market growers of Boston and elsewhere throughout the United States. I wish to leave the impression that we are not endeavoring to produce new varieties, but rather to bring about a high standard of excellence in the best commercial sorts already upon the market. We are interested in the producer of the commercial crop and we feel that if we can place this choice stock seed at the disposal of those who grow the seed, we can to that extent insure the producer of the market product. This we think is one of the cheapest crop insurances which the government can offer to the gardeners and truck farmers of the United States.

SUMMER BLOOMING BULBS.

By Isaac S. Hendrickson, Floral Park, New York.

Delivered before the Society, February 4, 1911.

I do not presume to bring to you anything particularly new or startling in this talk about summer blooming bulbs, but perhaps together we can bring out some interesting points on a subject that is old yet ever new, for while bulbs are simply bulbs, always have been, and always will be, requiring about the same treatment in the way of culture, etc. that has been in vogue for all time, when we once take up the subject and delve into species, varieties, freaks, etc., there seems to ever be something new. It is like walking in a rose garden on a morning in June; as we walk we see the same kind of roses we have seen year after year, yet when we stop to examine our favorite Jack, or Mrs. Laing, or Frau Karl Druschki, we are led to exclaim "was there ever such exquisite beauty revealed to any one before this particular morning."

There is something very fascinating about bulbs to nearly every flower lover, and rightfully so, for no class of plant life can give more enjoyment. There seems to be something almost human and immortal in a bulb as we handle and examine it, and find that very often the perfect form of the future flower is wrapped up and hidden in the heart of the bulb. When we buy seed from the seedsman, it requires almost a professional gardener's skill to bring forth the flower, but not so the bulb, for when you receive it from the hands of the grower it already contains within itself the food for the future flower. I suppose that nearly everyone in this room today has cut a hyacinth bulb in half and discovered the tiny blossom in perfect form ready to push out in perfection of bloom when submitted to proper conditions. I shall never forget my sense of wonder when I first discovered this secret, and I have ever since held a peculiar feeling for a bulb. In speaking of summer flowering

bulbs, we expect to deal in nearly every case with what we call tender bulbs, or in other words a class of bulbs that must be planted in the spring, cared for during the time of bloom, which is usually during the warm months, and then lifted and stored in a warm store room or cellar away from cold and exposure, and treated with almost as much care as a child. In fact, when we stop to think of it, there is something very human about all plant life and especially so with the tender bulbs, but I think you will agree with me when I say they are worth their extra care when we fully realize their possibilities in the way of bloom. To take our subject alphabetically we will begin with

Amaryllis formosissima, called Jacobean lily, or Indian red daffodil. While this bulb is really a Sprekelia, and not an Amaryllis at all, we seldom hear it called by its true name. It is a native of South America, and was first introduced in Europe in 1593, but owing to its being classed with the daffodils, and its nature not properly understood, it was soon lost to cultivation for a time until greenhouses and stove houses were brought into use so that the tender bulbs could be protected during cold seasons. It is one of the first and brightest of the tender bulbs to bloom; they are hardly more than put in the ground when the bright red petals push their way through the brown earth in advance of any foliage, and when they are planted in quantity the effect is striking. It must be a sight to see them blooming in their natural haunts. Miller's Gardening Dictionary speaks of them as producing flowers two or three times a year, but this I do not know from experience. For garden culture plant the bulb in May, and cover about three inches; when the foliage has ripened in the fall they must be lifted and stored in a warm place.

We next come to the Arums, which are often called snake lilies, black callas, monarch of the east, etc. For my part I cannot see any particular beauty in these bulbs, the flowers of which emit a very disagreeable and offensive odor; however, there seems to be quite a demand for them; the fact of their making a large bulb may account for it somewhat, or they may be useful for foliage effects after removing the blossoms. A bulb that should be better known and more freely planted is *Bessera elegans* or coral drops. It is a very small bulb, but the red flowers are borne on long grace-

ful stems which make a pleasing effect when planted in clumps, and are useful for cutting. They are native of Texas and Mexico. In connection with this bulb I would like to divert from the alphabetical order and mention two other bulbs which are often classed with Bessera, and called the three Mexican gems, namely, *Cyclobothra flava,* a very graceful plant with bell-shaped flowers, bright yellow dotted brown, and *Milla biflora,* often called Mexican star of Bethlehem, producing the purest waxy white flowers imaginable, often measuring about two inches in diameter. A class of summer bulbs recently come into prominence are summer blooming Callas, or correctly spoken of as Richardias. Several new and valuable varieties have been produced, and introduced during the past few years, among them I will mention the following: Aurata, called the lemon calla has a light lemon yellow flower with a chocolate patch in the throat, which brings out a conspicuous contrast of color; the foliage is spotted white. Mrs. Roosevelt is a late introduction and sometimes comes very fine; the flowers are white, tinged with lemon, not very free flowering. Rhemanni, largely advertised as the "pink calla sensation," is a dainty little flower much smaller than most of the other Callas, and I am inclined to think it is useful as a novelty only. Pentlandi certainly produces a very beautiful flower of a rich golden yellow, but the bulb seems to be weak and not very prolific, so it appears that if a yellow calla is wanted (and I believe it is) we have everything that can be desired in the variety Elliottiana "the peer of them all"; not a new one by any means, but one that is not known as it should be. I have seen quantities of this calla on a commercial place grown and treated just about the same as one would treat potatoes, and the sight when in flower is indescribable. You can get some idea of it when I tell you the flower is nearly, if not quite, as large as the ordinary white calla of the greenhouse, and the color a beautiful deep golden yellow, not simply tinted yellow or lemon, but actually golden yellow, and every bulb will produce a bloom; its time of flowering is July. It must be taken up in the fall and cared for about the same as a gladiolus bulb.

Cooperia pedunculata, commonly known in the South as rain lily or fairy lily, is a bulb that produces a beautiful little white waxy, fragrant flower which opens usually at night, and remains

open for three days and three nights, closing on the fourth day. In their native haunts it is said they often bloom two or three times a season, clusters of them springing into bloom immediately after every shower. In the north, they must be treated as other tender bulbs; they can be planted in May about three inches deep and they flower about August. They should be lifted in the fall and kept in dry soil.

Cooperia Drummondi or evening star has a longer tube than the rain lily, but the flat portion is not as wide. It blooms later and the flower does not last as long. *Eucomis punctata,* pineapple flower, does not seem to be very common, but it is really a most satisfactory bulb; it is a native of the Cape of Good Hope, but does very well in the open ground, treated as other summer bulbs. It produces a wavy, crinkled foliage from the center of which shoots a stem about two feet high with a head of greenish-white flowers with dark centers; it is not hardy so must be lifted and stored.

While I understand that the subject of the gladiolus has been treated at a previous meeting of your Society, I am going to ask that you bear with me for a few moments, as I feel I must touch on this very important, if not the most important, group of summer blooming bulbs. First as to the pronunciation. I am free to admit that I incline to the old-fashioned way of gladiólus, and I believe I have some good authorities to bear me out, but as I know some of my best friends are on the other side, perhaps we will have to compromise and adopt the language of the vendor on the street, and just call them "glads." Whichever way we decide to pronounce the name, they are a class of bulbs demanding our attention now as never before, and with cause; for never before were such beautiful and vivid colors seen in any flower, and I believe that we are only on the threshold, so to speak, of what is in store for us in the way of color, size, and beauty in the gladiolus; and where is there any class of bulbs or plants with the possible exception of dahlias, that will give us such a protracted season of bloom with so little care and attention. The bulbs can be planted with safety just as soon as the ground can be worked in the spring, and by planting in succession up to July, the blooming season will extend to October freezing weather.

The progress made in the development of this "King of summer

flowering bulbs" is certainly remarkable; where a few years ago a few small flowered varieties were now and then seen, occupying only a small part of the seedsman's catalogue, they are now grown by nearly every flower lover, and the dealer is giving them more and more attention every year, and I believe the time will come when they will be as widely known as the rose, dahlia, sweet pea, etc., for they are indeed the "Orchid of the common people." Their low cost combined with their ease of culture puts them within reach of all. While they will yield good returns with ordinary treatment, they will surprise us if given a little special treatment in the way of good rich soil. I would advise planting the bulbs about four inches deep in garden culture, as they then will be better able to withstand any drought they may have to contend with, and will not be disturbed so easily by the wind, as is the case when planted shallow. It has been said that the matter of naming the varieties has been overdone, and I certainly agree in this, as I do not believe any other class of plants has been blessed with so many descendants. Perhaps you will be surprised when I say that I have in my possession an indexed book containing the names and descriptions of nearly 3000 varieties; of course most of these are from foreign catalogues. However, as the raising of new varieties from seed is so very easy, and so intensely interesting, we shall probably never see the end and of course we do not want to, if the future will bring forth varieties of real merit; but the danger lies in the fact that many are raised and named by people who have no way of knowing, or do not take the trouble to find out just how good or poor their pets are when compared with varieties already in commerce. The recently formed American Gladiolus Society hopes to do some good work along these lines.

Just a word in regard to the habits, etc. of the various varieties. We are very often asked why the light and more beautiful colored sorts are more expensive than the dark; my answer is, that in nearly nine cases out of ten, the light colored sort will produce only a small percentage of bulblets where a dark or inferior sort will produce an abundance; for example, the bulb I have here is a very ordinary variety and one that is very persistent in its growth and habits. Observe the large number of bulblets. This other sample is a much finer variety and note the absence of bulb-

lets. Again when we watch a customer selecting bulbs at the flower shop we notice that only the very largest ones are taken, which is altogether wrong, if we want a genuine mixture, as nearly every variety makes a different size and shape of bulb, and very often it happens that the choicest flowers are concealed in the smallest bulbs.

Considering that nearly every catalogue lists the *Ismene calathena grandiflora,* it seems that about every one must be familiar with it, either from personal experience or seeing it in a neighbor's garden, but I cannot refrain from speaking of it as a very useful and easy to handle bulb. It is very often called the white amaryllis, a very appropriate name, as it resembles an amaryllis flower in shape and habit very much. The bulbs do best when planted in May and covered over with soil to a depth of three or four inches; during June and running into July they will produce their pure white fragrant blossoms very freely before the foliage appears.

Another bulb that should be given more attention is what we usually call the summer hyacinth or *Hyacinthus candicans,* or more properly speaking *Galtonia candicans.* This bulb grown singly does not attract much attention, but when grown as it should be in masses of at least twenty-five or more, it makes a fine show and a splendid background for other flowers, and they will remain in flower several weeks. While it is a native of South Africa, it is considered quite hardy, but my experience has been that it is better to take it up altogether, and treat as a tender bulb, or cover well with a mulch. The bulbs grow readily from seed, and will sometimes produce bloom the second year and always the third year.

We now come to another important group of summer blooming bulbs, namely, Liliums, but as this subject has been fully covered in a recent lecture, I will not dwell at length, although there is temptation to do so, for where can we find a nobler, grander group of flowers than we find among the lilies; how their purity compels our admiration; how their fragrance charms and soothes and seems to carry us into another world. I must speak of two or three which really ought to be better known. Hansoni, which is a variety named in honor of P. Hanson, of Brooklyn, by Max Leichtlin, of Germany. It is a fine variety growing from two to three feet

high with bright green foliage, producing from four to twelve dark yellow flowers remarkable for their thickness of petals and wax-like appearance. It will grow as easy as a tiger lily, and is just as hardy; it flowers in June. Perhaps the hardy garden lily with the greatest future is Henryi, the yellow speciosum. This lily has been brought to us from the mountains of China, and it is indeed a gem, as it will thrive without any special care, producing strong panicles of yellow flowers, resembling very strongly the much admired speciosum form.

Lycoris squamigera, or *Amaryllis Hallii*, or called by some magic flower, is a most interesting subject; the bulb is similar in shape and size to an amaryllis, but really belongs to the Nerines. It can be planted either in spring or fall, but I would prefer the fall, as there would be more time for the roots to form, as the foliage starts out early in the spring and grows quite rank until sometime in July, when it begins to dry up, and any one not familiar with its nature would think it had died, but about a month later, as if by magic, the flower stalk springs from the ground for a height of about two or three feet, producing an umbel of beautiful lily shaped flowers three or four inches across, and eight to twelve in number, of a delicate lilac pink, shaded with clear blue. It is perfectly hardy and makes a splendid acquisition to the hardy border. Cover about four inches.

Montbretias are coming more and more into prominence, and some of the newer sorts such as Germania, Geo. Davison, Martagon, etc. are very charming and useful, and I believe are destined to be grown more and more for cutting as they mix well with other flowers. Tigridias, commonly called shell flowers, owing to their resemblance to beautiful sea shells are very interesting from a standpoint of color, form, etc., but their great drawback is the short life of the individual flower, which never lasts more than a day, therefore it is almost useless as a cut flower; however, by planting a number of them we are apt to have a few blooms at almost any time during the summer.

Zephyranthes, or zephyr lilies, are very close relatives of the Cooperias and may be grown in about the same way. There are several varieties and species, but the best ones are Rosea, a rosy red color, and Candida, pure white, the most beautiful of all.

These both bloom late in the summer and the bulbs must be taken up and stored before freezing. They are very useful for planting in the borders.

Discussion.

In reply to a question as to how long it takes for a bulblet to flower the Lecturer said that it would be two or three years before you could count on much bloom.

Another asked if seven or eight inches was too deep to plant gladiolus bulbs. The Lecturer said that seven or eight inches was too great a depth for them where the soil was not sandy. He found that in field culture about five inches was a good depth for large bulbs. When they have been planted about ten days he went over them with a harrow to destroy the weeds, which took off about an inch of the ground covering. The smaller bulbs are covered only about an inch.

In planting dahlia tubers, if the soil is very heavy, three inches is the right depth to plant, but if the soil is sandy and you are planting a bulb which will produce a heavy flower, they should be planted about two inches deeper. A heavy flower cannot stand in shallow ground.

Concerning the planting of bulbs in grass the Lecturer said that it was all right for spring bulbs but not for summer bulbs. Summer bulbs need cultivation and would be choked out in grass.

An inquiry was made as to the cause of the disappearance of some lilies a year or two after planting, to which the Lecturer replied that one reason was that the bulbs became diseased, as is the case with *Lilium auratum,* and that there was great danger of losing this handsome lily. Also that mice were destructive to some bulbs, especially those of Tigridia, of which they were particularly fond, and would pick them out of a fifty acre field.

Concerning the method of obtaining new varieties he stated that by planting the seed you would be sure to get something different and new. In gladiolus we depend on the seed. Select seeds from the best varieties and sow them and you get variation. He had not done any hand crossing but by selecting the seeds from the best formed and best colored varieties and sowing them the best

results would be obtained. In dahlias all the variation comes from planting the seeds.

William J. Stewart spoke on the subject of growing bulbs in grass and said that we ought to distinguish between the bulb grown in grass and that grown on the lawn. The bulbs must be allowed to grow and die a natural death without being disturbed by the cutting of the grass and they will grow another year. Crocuses will disappear in a year or two if the leaves are prematurely cut but narcissuses if left in a corner and neglected will flower year after year.

Mr. Stewart called special attention to the orange day lily (Hemerocallis) which is frequently met with in New England as an escape from old gardens and despite all abuse and neglect persists in flowering year after year along broken-down stone walls and fence-rows. In a visit last summer to New Jersey he was much impressed with the beautiful picture presented by the great masses of this brilliant flower growing everywhere along the roadsides and around dwellings. They had maintained themselves for years and the more neglected the more beautiful and attractive appearance they seemed to make.

THE OUTLOOK COUNTRYWARD.

By Prof. L. H. Bailey, Ithaca, New York.

Delivered before the Society, March 11, 1911.

Two important movements are now before the country — the country-life movement and the back-to-the-land movement. The country-life movement is the expression of the desire to make the farming regions as satisfying and effective socially and economically as are the towns and the cities. The movement is not only sound but is fundamental, for the reason that an effort to effectualize any necessary existing society is part of the progress of civilization.

The present back-to-the-land agitation is largely a city effort, expressing many motives and ideas. It is in part an effort of the city to relieve its congestion, in part a desire to find labor for the unemployed, in part the result of the doubtful propaganda to decrease the cost of living by sending more persons to the land, in part the desire of certain persons to escape the city, and in part the effort of real-estate dealers to sell land. There can be no objection to properly qualified city persons moving out to the open country, and many of them make good farmers; but for the most part the back-to-the-land movement is socially and economically unsound.

Something can be done, perhaps, to relieve city congestion by finding opportunities for urban citizens in the country, but the extent of relief that really can be secured in this way is very small and it does not reach the core of the question; for the core of the question is that the city must learn to take care of its own and to solve its inherent problems, and that the whole interrelation of city and country must be solved by fundamental processes. Part of the congestion of cities is the increase due to immigration. Undoubt-

edly much can be done properly to disperse our aliens and to place them where they will be of service to themselves and to employers without constituting a problem of congestion. This, however, is a question of plain distribution rather than of land settlement. The real country-life movement itself will do something directly to relieve city congestion, because it will tend to keep country people in the country; and yet we must recognize the fact that many country people are better fitted by temperament for city life than for agricultural life.

There seems to be much needless alarm over the decline of rural populations. We must remember that we have passed through the rural or agricultural phase of our evolution. In 1790, about nine-tenths of all our people were on the farms; a hundred years later about one-third (counting men, women, and children) were on the land or very closely connected with it. I expect that the present census will show a smaller proportion, and possibly the census of 1920 will show a still smaller ratio, although the ratio has already undoubtedly sunk too low in some localities or regions. We shall never again be a rural people. The best society is neither exclusively rural nor exclusively urban. What proportion the rural population must hold to the whole population, no one now knows. The decline in rural population is only one expression of the sorting of our people into their groups; and we have not yet struck bottom in this process.

The powers of a single farmer are being much augmented by the application of knowledge, the development of business management, the use of machinery, and by coöperative enterprises. Of course, the actual number of farmers will immensely increase, but the ratio cannot be expected to increase. There will be a great increase in demand for products of the farm as civilization progresses and as tastes become more complex, but the expanding powers of individual landsmen will be able to supply these enlarging demands. What will be the ratio of increase in demand for agricultural products, no one yet can say. It is true that the progress of civilization does not greatly enlarge a man's eating capacity, but it greatly increases the variety of his food and improves its quality, and this of itself, wholly aside from the quantity of the demand, will call for much greater activity and skill on the part of the farmer.

But human food crops are probably not one-half the agricultural produce, and these other products increase in intimate ratio with the progress of civilization. These other supplies are cotton, wool, hemp, and other fibres, timber and all timber products, all paper materials, the output of floriculture and other special industries, leather, and practically all other produce of the earth with the exception of metals and minerals and coal. Very much is going to be demanded of the farmer to supply all this wealth and variety of material.

There is probably sufficient ratio of persons now living on the land, to supply all this increasing demand for the raw materials, if only these persons were properly effective. To displace them or to augment them by city people may provide a corrective here and there, but it can be only an incidental factor. The great question is how to reach the people who live on the land, how to sort out those who ought not to live on the land, and how to direct our economic and social growth so as to make it profitable and attractive and in every way worth while for a man to live on the land throughout his life.

I do not think that the mere lessening of the numbers of rural people has any very close relation to the cost-of-living question. The great problem in this regard is to improve our means of distribution, so that the materials may be taken from the producer to the consumer with the least delay, the least cost, and the least waste. It is a shameful commentary on our economic and social system that in these days of great production of agricultural produce in the fertile land of North America, people still suffer for food in the great cities. We need to give much more attention to the distribution of our products than merely to placing more persons on the land. Persons will be satisfied to live on the land just as rapidly and as far as it is economically profitable and socially pleasant for them to live there.

Our civilization is a system of economic loss. Society is built on the process of waste. The city drains the goods from the open country, extracts the kernel, and throws the husks into the rivers and the sea. The cities are half-way stations between the potash, phosphoric acid, and nitrogen of the farms and the bottom of the ocean. The city tends always to destroy its province. It sits

like a parasite, running its roots into all the surrounding country and draining it of its life-blood. Many a rural community is already sucked dry. Our business or commercial structure is responsible for the wastes of distribution. That it should require sixty-five cents out of every hundred to remove a good part of our produce from the land to the dinner-table is an indication that we are living in a very imperfect and undeveloped economic era.

The organization of society does not seem to have within itself the means of its own correction or salvation. We are obliged to apply correctives by extraneous legislative and legal processes in order to control the streams of waste. Until we evolve a structure in which economic waste is inherently reduced to the minimum, we cannot expect to make great progress toward a self-sustaining civilization. We have yet no large permanent agriculture; and this means that we have yet no permanent civilization.

To find some real economic relationship between city and country whereby the city will give back something to the country rather than to take everything from it, and whereby it will be as much interested in maintaining the producing-power of land as in developing art and literature and municipal systems, is the fundamental problem of civilization. City and country are coming together sympathetically, but this is largely a matter of acquaintanceship. There is no real adequate coördination between the two. If the city is ever really to aid the country it must be mostly by the development of this mutual coördination and not by the city going into farming. Farming is a business for farmers.

TREATMENT FOR OLD ORCHARDS.

By Dr. G. M. Twitchell, Auburn, Maine.

Delivered before the Society, March 18, 1911.

A great injury is being done our fruit industry by the over stimulation given the setting of new orchards. Under conditions prevailing all over this country it is wellnigh impossible to get the quality of trees, of the right varieties, for our market and climate, and until we are aroused to the absolute necessity for giving these trees better care and attention, as well as protection from pests and diseases, it would be well for the future if we made haste slowly. The man who fails in his duty to his old orchard never will make a success of the new.

The State of Maine is well covered with apple trees showing, in far too many cases, evidence of neglect. Our fruit crop is practically one and one-half million barrels, but if the trees now living were properly cared for the crop would be doubled and the small and defective apples wiped out. Our first duty then, is to the old orchard, yes, those scattered trees with seemingly little of live wood in their trunks. Given a chance they will come back wonderfully. Wisdom and prudence demand that, without delay, all dead or worthless trees or trunks be removed and burned. They are the natural and most inviting lodging places for all pests and disease spores, and, suffering as our orchards are, with contagious diseases, like canker, the removal of these promoters of evil should not be delayed. Another important step is to promptly remove all dead wood or branches, cut in pruning, and burn, keeping the ground about the trees clear of all waste material, the very best harboring place for pests.

A neglected tree is like a sick man. It cannot do its normal work; it cannot resist disease attacks; it cannot digest hearty food; and it must be treated as weak and lacking in vitality. This

explains why these old trees suffer from spraying solutions, while normal trees are benefited. Experience has forced the conclusions here presented. The first step is to begin to free the tree from its burden of dead wood and scraggy growth of water shoots, suckers, etc. Two to three years are necessary to properly prune one of these trees. It has not the vitality to withstand too many amputations. Clear out the dead wood, cut the shoots and prune slightly to open the top, at the first treatment, before the sap starts. In the fall give another pruning and be satisfied to get the desired top in three years. As soon as spring opens and before the leaves start, give each tree a moderately stimulating dose of good food. The leaves being lungs and stomach their increase and vigor must first be secured. These being dependent on nitrogen we feed what otherwise would be an excess. Never lose sight of the physical condition of the tree.

Experience justifies the statement that the cheapest, safest, and most efficient medicine to be fed at this time is what we know as Fisher formula fertilizer, made up from 700 lbs. nitrate of soda, 300 sulphate of ammonia, 460 sulphate potash, 440 acid phosphate, and 100 of kainit, or 8 per cent of nitrogen, in form to be at once available, 3 of phosphoric acid, and 11 of potash.

This is an unbalanced fertilizer and if continued after leaf and new wood growth is abundant will work injury. Its province is to put the old tree in normal condition so far as abundance of large, rich leaves and new wood growth can do this. Ten pounds to a full grown tree is the dose, applied early in May, to be scattered out where the branches drip and the feeding roots congregate. Better results will obtain if this food be spread upon the surface, and the grass cut later and spread as a mulch.

Another important step is to thoroughly scrape trunks and large limbs, being careful not to injure the new wood. This removes quantities of eggs, scale, and other pests which have found lodgment under the rough bark. Then carefully slake one-third cask of fresh lump lime, add one bushel of hard-wood ashes, one can of caustic potash, and a little Portland cement to deaden the color of the wash. Fill the barrel with water and you have an ideal wash with which trunks and branches should be scrubbed. It will do them good, they will thank you for it. This work should be done

the last of March or the first of April, just when other work waits settled weather.

By the time the tree is pruned its normal condition should be in evidence as a result of the treatment given, and more radical steps can be taken to protect from insect pests and diseases. What nature asks is that we coöperate. Very little can be accomplished by forcing. In fact, lasting injury is almost certain to follow the attempt to spray for either pests or diseases when the tree is in a sub-normal condition. If it has suffered because of neglect the fruit certainly cannot be normal in quality, and this suggests a study of the problem of fertilization to furnish the elements necessary for the perfecting of fruit. It may be questioned today whether acid phosphate is the best or proper source of phosphoric acid supply. In some experiments, to remove the woody spots in Northern Spys and brown rot in Baldwins, basic slag meal gave results not obtained from acid phosphate and, while the problem is not solved, the line of practice for another year is certainly indicated. The fertilizer to be used on these old trees this year will carry 3 per cent of nitrogen, partly from nitrate of soda and the remainder from bone meal, 11 of phosphoric acid from basic slag and bone meal, and 10 of potash from sulphate of potash. Fifteen pounds should be spread under these full grown trees early in May and raked in, but not within six feet of the trunks. Later all grass will be cut and used as a mulch. The formula for this fertilizer is nitrate of soda 300, bone meal, fine, 300, basic slag meal 1000, and sulphate potash 400 lbs.

Time alone can determine to what extent quality and freedom from disease can be controlled by feeding, but I submit that here is an open field for experimentation full of suggestion and rich in promise. There must be a soil condition favorable to tree and fruit development in the highest degree, else failure will result. The robber system which for years has prevailed, taking all we could and giving little in return, has produced lop-sided conditions in trees and soils. Our first duty is to seek to restore the balance, else success will be impossible. If this calls for study and investigation, so much the better for the man.

Dealing with different soil conditions in different localities it is not possible to establish any definite rule of action. The objective

point is clear and the steps leading thereto must necessarily require individual investigation and interpretation. The attempt to unify all practices and methods of treatment must in some cases lead to failure. It is as necessary that one ascertain wherein his soil is deficient as that he feed it intelligently when the facts are established. No analysis can reach this. It must be solved by individual experimentation. The extremist admits no line of action but that of cultivation; the grower finds equally as good results by mulching, thereby proving the wonderful adjustability of nature, but no man ever succeeded by neglect of any particular.

"But," says one, "my old trees are poor in quality, not wanted in the market, what shall I do?"

Restore your trees, then graft to that variety which thrives best in your locality, is of the right color, and has good quality. Never use a scion simply because it came from a tree of the desired variety. Make certain that it represents reproductive power; that it came from a tree of high colored, typical fruit of choice quality. The scion from a Baldwin tree giving an average of ten barrels yearly for five years is more certain to give satisfaction than from a more attractive tree yielding ten barrels in five years. Only recently have we been aroused to the importance of this principle recognized everywhere in the breeding of pure bred stock. Viewed from a business standpoint, every item must be considered and the value of this one of selecting scions cannot be magnified. Use none except from trees known to have been persistent bearers of the right type of fruit.

The quality of New England fruit is superior, but it is made so only by feeding, pruning, protecting, spraying, and caring for tree and fruit in such manner as to promote best growth and highest quality. Whether, in reaching after this end, one relies on barn manures or chemicals, the lesson is the same, the food supply must be adjusted to the balancing of tree and soil, and the stimulating of that which each tree or the fruit is deficient in. When this balance is struck we approach ideal quality and always liberal quantity.

Looking at the proposition from a commercial standpoint the value of a tree is proportionate to its normal capacity to produce and yet maintain its powers. Every old tree in rugged, healthy

condition should yield an average net income of at least six per cent on one hundred dollars yearly. If the variety is inferior, work it over; if the cost of picking is too great, cut back the main trunk branches and make a new top; if the fruit is imperfect, balance the food supply. The lesson is as applicable here as with the dairy cow. The American people accept results but fail signally to recognize how these obtain. Our whole crop condition would today be in a deplorable condition but for the services of the scientist and experimenter, and those services should be recognized.

The man who refuses to spray his trees or his fields invites ruin. We have passed out of the experimental stage here and must accept as fundamentally true what these scientists for the last forty to fifty years have been demonstrating. If they have found more light and safer or less injurious agents, it only proves that they are still diligent in seeking the truer way. That Bordeaux mixture injures fruit and trees is no argument against spraying, but indicates that we are yearly meeting new conditions which upset old theories and make necessary further research. It is for you and me to thankfully accept what they offer and faithfully labor to make the same effective in largest degree. Our trees must be more thoroughly sprayed in 1911 than last year. Not one spraying, but three at least, must be the rule, and let this be thoroughly done, using only such sprayers as are easily controlled and where abundant power can be maintained.

Spraying benefits the tree and crop, provided solutions are harmless to leaf and twig. It is profitable from the standpoint of added vigor as well as that of destruction of pests or protection from disease. Given like conditions in all other respects the fruit from a sprayed tree will be larger, choicer, and of better color than from one not sprayed. The steadily increasing army of insect pests and multiplying forms of fungous diseases make absolutely necessary this spraying at regular periods and with varying solutions. In 1908 the fruit from a lot of old trees, on which work of reclaiming began that year, was forty per cent wormy. In 1909 twenty-five per cent. Spraying once, the first of June, 1910, for codling moth, using 15 lbs. Bug Death to 50 gallons water, the per cent was less than one. Unfortunately the old time practice was to set trees by the roadside and along the line fences, adding materially to the cost of spraying, but this cannot excuse for neglect.

The certainty of the industry, the rapidly increasing competition New England is to meet, the rigid sorting, grading, and packing followed elsewhere, force a study of the situation not necessary before. New England holds the best markets of the East and her manufacturing towns are multiplying rapidly. In location the apple grower here occupies a vantage ground of priceless value if he will but step in and occupy it. The hill slopes, cooler climate, and abundant springs insure a texture, juiciness, and flavor not to be equalled on irrigated lands. All that is required is that we balance the soil, feed the trees, prune, protect, spray, and carefully pick the fruit, for the New England apple to take its place in the great markets and bring increasing prosperity to all this section of country.

In the competition of the near future something more will be demanded than trueness to name, evenness in color; or uniformity in size, and New England orchardists should be prompt to apply the lesson. An apple carries 82 to 85 per cent of water. Sugar 8.16, sucrose 4.16, ash .26, acid .59, and insoluble organic matter 1.85. The skill of the orchardist must be directed to increasing the essential qualities of his fruit. Apples as food owe their value largely to the acids they contain, as well as the starch and sugar, in that these play an important part in the complete digestion of other food. With the call everywhere for a finished product and the Far West putting on our market fruit of size and color we can hardly hope to equal, for the present it behooves the Eastern grower to intensify quality, texture, flavor, juiciness. These are the essentials of our fruit and the field is ours if we will but occupy it.

More trees are dying from starvation than are injured by excess of food.

In setting a new orchard allow ample space between the trees. Never employ a man who boasts of how many trees he can set in a day. You are here at the gateway of a full century and thoroughness should be the word. Give every young tree a four feet square hole of good depth. Look well to root development. Trim off all bruised roots. Work into the soil two quarts of fine bone meal about every tree. Later when the leaves start give them one-fourth pound of fertilizer upon the basis of 200 lbs. nitrate of soda, 400

tankage, 400 basic slag, 200 sulphate potash (N. H. Station formula). This gives 5 per cent of nitrogen, 8.3 of phosphoric acid, and 8.3 of potash. The second year apply one-half pound, third year three-fourths, and so on, extending the amount each year.

Some may question the profits. Let me cite a few cases coming under my own observation the past few years.

In one case the old trees on one acre of light soil, so poor in condition that when purchased five years ago the trees were counted worthless, were treated much the same as my own and for three years past the net returns from the fruit gathered have exceeded two hundred dollars yearly.

Four and one-half acres in a Massachusetts town gave in 1910 800 barrels of choice Baldwins and Spys. One Baldwin tree gave 17 barrels and two Spy trees 28 barrels. These trees have been sprayed once yearly since 1896. No brown-tail moths, no scale, no codling moths in that orchard, yet all around the orchards in as good condition as this when spraying commenced are all dead.

An old orchard of this neglected description composed of 500 trees, taken in hand and put in shape, at the end of four years from the time the work of reclaiming began, had returned its owner $3400.

Another of 140 trees not in prime condition, surely not fertilized properly, returned, in eight years, six thousand dollars to its owner, with a total outlay for fertilizer, barrels, picking, and packing of one thousand dollars. In 1909 the yield was 260 barrels, selling for $3.25, and in 1910, 287, for which the owner realized $4.05 per barrel. All over New England these illustrations might be duplicated. One little section in Northern Massachusetts, rocky, not to be cultivated, covering a small fraction of three or four towns, sent out last year more than forty thousand dollars' worth of apples, mostly from reclaimed trees, and there is promise of great increase, for the work begun has not yet borne full fruitage.

The mainspring of success lies in producing a choicer product than your neighbor. The shortest route to this end lies in the creating of pedigree trees. The influence of root or trunk upon fruit through scion is not yet fixed, but there is the certainty that the better the quality of the tree in which the scion is set the greater the promise for improvement through the graft. A field of experimentation is here suggested at once inviting and promising.

Already we have found that by wise selection of varieties in tree and scion it is possible to materially change the habits, hasten the bearing period, strengthen against decay, and produce a more resistant apple. The field is open for a wonderful advance and the old orchards offer a grand opportunity for the live orchardist. When once we are made alive to the possibilities through specific fertilization, intelligent pruning, and skilful grafting, New England orchards will demonstrate their ability to produce the choicest fruit of any section of the country.

Those looking for an investment, for a country home, and a permanent income, can find none surer than the old hill orchards of New England, and as these are reclaimed, the possible extension by setting new trees will lead directly to substantial profits and an enduring industry. New England when aroused to the worth of the industry will swing into line to hold the markets of the East and perfect the choicest apples of the world. Never forget that the granite soil, pure water, and hillsides of old New England can produce a quality of apples unequalled in any other portion on the globe. It remains for you and me to go forth and prove faith by works.

THE HORTICULTURAL AWAKENING OF NEW ENGLAND.

By John H. Hale, South Glastonbury, Connecticut.

Delivered before the Society, March 25, 1911.

The records of this, the oldest horticultural society in America, and of the Massachusetts Historical Society, show a New England interest in horticulture from our earliest settlement, particularly in orchard and vineyard products as a source of food and drink supply for the family. Later and wiser generations have mostly done away with the drink, and fruit as food for both family and market is yearly becoming more and more a very important factor in our agricultural and commercial life. The necessities of New England small farming, with only the help of "the boys" and possibly one "hired man" for a portion of the year, resulting only in small cash crops in variety as could be sold in local markets, prevented specialization in orcharding on any extended scale.

In recent years, however, fruits produced at a distance, so far away that they must be well grown and packed, have been coming into New England in such quantities and of such beautiful appearance as to greatly stimulate consumption and cause our most thoughtful horticulturists to take serious notice and many to ask the reason why with the same care and attention New England orchardists could not produce fruit equally good in appearance and of far better quality. With the agricultural experiment stations and colleges, state and local horticultural and pomological societies, farm institutes and granges, almost with one accord, investigating, experimenting, and talking modern methods of orchard management, as taught by scientists and practised by the few pioneer orchardists in each of the six New England States, there has at last come an awakening to a full realization of the wonderful orchard possibilities so long neglected, while less favored

sections far away have been filling our markets with beautiful, but inferior fruits. Connecticut, with more than one million peach trees in orchards, now produces a greater annual output than Delaware, while Rhode Island, Massachusetts, and New Hampshire, stimulated by Connecticut's success, have now more than 300,000 trees in orchards and from the middle of August well into October more peaches are produced in New England than her markets can consume, and if present contemplated plantings are continued we will soon be hunting for markets in sharp competition with the South and West.

The taking up of many of our small and semi-idle farms by newcomers from the North of Italy, who, just as quickly as they are well settled on the land, plant a vineyard, is bringing about some remarkable results in grape production, especially in Massachusetts, Rhode Island, and Connecticut, where five to eight tons of grapes per acre are annually being taken from lands considered almost worthless before. This so clearly indicates the great commercial possibilities of grape culture in New England as to lead to the belief that before many years grapes now coming from other states will largely be replaced by those of higher quality of our own growing, for there is no question but that fruits grown on the rocky hill lands of New England are richer in quality than similar varieties grown elsewhere. Those who, not so many years ago, sold out their New England farms at from $20 to $50 per acre, and because of alluring advertisements, went to remote sections of the country, paid higher prices for land to grow fruits upon, are waking up to the fact that the "stay-at-homes" and the incoming foreigners, who had faith in New England lands, are with the aid of modern horticultural science and practice, reaping far greater cash rewards from the cheap lands of New England than are those on the high-priced lands so far away.

The cost of transportation alone takes from one-third to one-half of the gross sales. It costs me $415 for freight and packages to place a car of my Georgia peaches on the New England market, while the same amount of Connecticut peaches can be placed for $75, making a sum of $340 per car in favor of New England, and the unification of our railroads, through the practical consolidation of the New York, New Haven & Hartford and the Boston & Maine

means much to us in the way of better and quicker distribution. The Connecticut Pomological Society, starting twenty years ago with seventeen members, now has nearly 700, and its summer field meetings, where around tree, plant, and vine, its members and visiting horticulturists discuss practical fruit questions, is perhaps the one greatest factor in our awakening, followed up as it is by associations of kindred nature in the other states and supplemented by farm institutes and grange meetings to the extent of several thousand each year, all culminating in that great New England Fruit Show held in this building in October, 1909. So successful was it that one of far greater magnitude likely to be held this coming fall is attracting the attention of the whole country.

This horticultural awakening has found its greatest opportunity in the apple, the best, yet most neglected of all our fruits, which in spite of more than 250 years growing in sod without feed or culture, and only an occasional butchery for pruning, has been giving to New England in reasonable abundance fruits of inferior appearance, yet so much superior in flavor and keeping qualities to apples from any other section of the country as to clearly indicate New England as the home of "the apple of quality."

Beautiful apples from the Far West, superbly graded and packed, coming to our markets in recent years, filling the show windows of fruit stores, so that they and the fruit stand displays have taken on a touch of color never dreamed of until King Apple came to its own, have crowded all else into the background. This tempting of consumers through their eyes has stimulated the apple market more in the past ten years than in the whole century preceding and finally awakened the owners of thousands of New England's old apple trees, so that culture and feeding is rapidly displacing the old-time orchard robbery of mowing and pasture. And as spraying, that prime necessity for the production of good fruit, could not be well and economically done three or more times each season on the old high-top trees, developed through more than two centuries of neglect, a process of beheading or "dehorning" is now being practised, by taking out from ten to twenty-five feet of the central top of each tree, smoothing up and rounding off the edges of all large cuts and painting them heavily. Leaving on all lower branches and suckers, cutting out all dead wood, scraping

off the rough bark, then while in dormant condition spraying the tree thoroughly with lime and sulphur to be followed during the growing season with two other sprayings of self-boiled lime and sulphur to which four pounds of arsenate of lead is added to each 100 gallons of spray mixture.

Very old trees so treated put on a wondrous new growth, and by thinning out the suckers and shaping the tree a little each year thereafter, broad, low-headed, vigorous, productive trees are being made in two or three years out of these old fellows, so that thirty to forty bushels of high-class apples per tree are being produced where none grew before. Ten thousand young trees in one orchard in New Hampshire and 14,000 in my own Connecticut orchards, and many orchards of two or three hundred trees each all over New England are being cared for on best modern lines, and while I am not able to speak for the others, the fact is that one of my orchards of twelve-year old Baldwins produced three to five barrels per tree this last season. Owing to their being modern, low-headed trees, 90 per cent of the fruit was harvested without the use of ladders of any kind, and because of three perfect sprayings, 98 per cent of the fruit was marketable. Six per cent of the lowest grade was good enough to sell at $3 to $3.50 per barrel, 26 per cent No. 2 selling at $5 to $6.50, while 66 per cent of the entire crop of 8000 bushels graded A1, selling early in the winter at $2.50 per fifty-pound box and $6.50 and $7 per barrel, and now at $8 per barrel and boxes at $3, retailing in fancy fruit stores at 75 cents to $1 per dozen, as against 30 cents per dozen for Florida and California oranges and 50 to 60 cents for Western apples. In shipping these Connecticut apples to consumers in twenty-two different states, each and every one has reported in substance, "Best apples we ever had."

A recent letter from a wholesale fruit firm in New York which handles Oregon and Washington apples by the tens of thousand boxes, says "As far as we are concerned can truthfully say that we have not had any good eating apples until this lot arrived, for the flavor is simply immense." That's not bad for New England quality, when for five months past these people have daily had the choicest of Oregon and Washington Jonathan and Spitzenburg to pick from. This is only mentioned to show "What fools we mortals be," when New England people and New England capital have

been rushing to the far West, paying $300 to $500 per acre for apple lands, which would have to pay $300 per car freight to reach our markets and then sell for less money than the New England apples of quality, that can be grown on $25 per acre land and pay less than $50 per car freight to reach the thirty million people living in the northeastern corner of the United States.

To the conference of New England governors held in this city three years ago, that banquet given to 600 New Englanders by the Boston Chamber of Commerce at the time of the great fruit show in October, 1909, and to Charles M. Cox, and his fellow workers, on the agricultural committee of the Boston Chamber of Commerce, much credit should be given for the intelligent way they are presenting New England's horticultural advantages to those who were blind before. And while a few years ago State street was shy of investing in landed operations so near at home, things are changing and the right men can now get all the money they want for its development.

Sylvester Baxter's article on "Golden New England" in the Outlook magazine and the contributions of Forrest Crissey in the Saturday Evening Post, all conspire to present our horticulture in its true light and largely account for the horticultural awakening that is turning all eyes to New England as the "Undiscovered country" of America. Overplanting may never go quite so far here as it has in the Northwest, yet I doubt not but what "boom" orchard companies, controlled by inexperienced, impractical, and possibly unscrupulous men, will ere long be offering stocks and bonds of their schemes or be working over the old Western one of selling orchard tracts to be cared for on the installment plan.

Unquestionbly there is a field here for legitimate investment in our orchard properties if handled by men of wide experience and strict integrity. However, danger signals should be hung out warning the inexperienced from town and country that good fruits are not to be grown on "Easy street," that money, skill, hard work, love of trees and plants, and long, patient waiting are even more important factors than our splendid soil, fine climate, and superb market conditions.

TRANSACTIONS

OF THE

MASSACHUSETTS HORTICULTURAL SOCIETY

FOR THE YEAR 1911

PART II

PUBLISHED BY THE SOCIETY
BOSTON
NINETEEN HUNDRED AND TWELVE

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Massachusetts Horticultural Society

1911

The Transactions of the Society are issued annually in two parts under the direction of the Committee on Lectures and Publications.

Communications relating to the objects of the Society, its publications, exhibitions, and membership, may be addressed to William P. Rich, Secretary, Horticultural Hall, No. 300 Massachusetts Avenue, Boston, Massachusetts.

Edward B. Wilder, *Chairman* John K. M. L. Farquhar Charles W. Hoitt William P. Rich	*Committee on Lectures and Publications*

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TRANSACTIONS

OF THE

Massachusetts Horticultural Society.

1911, PART II.

REPORT OF THE BOARD OF TRUSTEES FOR THE YEAR 1911.

The Board of Trustees of the Massachusetts Horticultural Society, in compliance with the requirement of the By-laws, presents herewith a report of the business transacted at its meetings during the year 1911.

There have been held three stated meetings and one special meeting with an average attendance of ten members.

January 7. A communication from Hon. Charles W. Hoitt was read declining the chairmanship of the Committee on Lectures and Publications, and on motion of Mr. Farquhar the declination was accepted and Edward B. Wilder was appointed chairman of that committee.

On motion of Prof. Sargent Richard M. Saltonstall was elected a Trustee for the current year to fill a vacancy existing in the Board.

Walter Hunnewell was appointed Treasurer of the Society for the year 1911 and William P. Rich was appointed Secretary, Librarian, and Superintendent of the Building.

Appropriations were voted as follow:

For the Library, $400.00, in addition to the income of the French and Farlow Funds.

For Lectures, a sum not exceeding $500.00, including the income of the John Lewis Russell Fund.

For arrangement of exhibitions, $250.00.

For library catalogue, $500.00, the same amount as appropriated last year but not used.

The special committee on the award of the George Robert White Medal of Honor reported the name of Jackson Thornton Dawson and the report of the committee was unanimously accepted and approved.

Mr. Farquhar, for the special committee on revision of the salaries of the exhibition committees, made a verbal report and asked for further time, which was granted.

Mr. Farquhar also called attention to the special prize funds of the Society and on motion of Prof. Sargent it was voted that the Secretary report the condition of all these funds at a future meeting.

On motion of Mr. Wheeler it was voted to appoint Prof. F. C. Sears of Amherst to represent the Society as vice-president of the New England Fruit Show.

The following named persons were duly elected to membership in the Society:

Franklin Wyman of Arlington, proposed by J. K. M. L. Farquhar.

William Anderson of Lancaster, proposed by J. K. M. L. Farquhar.

Lyman F. Priest of Gleasondale, proposed by Wilfrid Wheeler.

April 1. A letter from Jackson Thornton Dawson was read. expressing his appreciation of the honor conferred upon him in the award of the George Robert White Medal of Honor.

Letters were presented also from Professor John Craig, Professor U. P. Hedrick, Dr. J. Ewing Mears, and Messrs. W. J. Bean, John Dunbar, and Wilhelm Miller, conveying their thanks for the honor of election to corresponding membership in the Society.

A communication from Richard J. Walsh, Secretary of the Conventions Committee of the Boston Chamber of Commerce, was presented referring to the proposed annual meeting in Boston this year of the American Association of Nurserymen.

On motion of Mr. Farquhar it was voted to invite this association to hold its annual convention in Horticultural Hall, Boston.

A letter from N. B. White of Norwood was considered in reference to his work in developing and disseminating new varieties of grapes, and it was voted that the matter be laid upon the table.

A report was received in writing from Mr. Pettigrew, chairman of the special committee on the prize funds of the Society, containing several recommendations regarding methods and rules for the proper exploitation of these bequests.

On motion of Mr. Farquhar it was voted that the matter be referred to the Committee on Prizes and Exhibitions with instructions to give such publicity to these funds in the publications of the Society as is desirable, and that special prize cards be prepared on which shall be printed the name of the founder of the fund.

On motion of Mr. Wheeler it was voted to grant the use of the halls of the Society's building, subject to expense of lighting and service, to the New England Fruit Show, Inc., for the purpose of holding an exhibition of New England fruits in October next.

Mr. Farquhar presented a proposition for a special exhibition of an indoor garden to be arranged by him in the main and small halls for two weeks in March, 1912, subject to the same conditions as those voted by the Trustees in regard to the exhibition of the Japanese Garden in 1909.

He also suggested that in connection with it the opening night be reserved for a special private opening with admission fee for all attending it whether members of the Society or not.

General Weld offered the following motion which was adopted:

That the Massachusetts Horticultural Society offer the use of its building for two weeks in March, 1912, to the Messrs. Farquhar for the purpose of an exhibition of flowers and shrubs. That in so doing the Society wishes to express its full appreciation of the liberal offer made by the Messrs. Farquhar and that the Society will do all in its power to make the exhibit a success.

On motion of Mr. Farquhar M. Emile Lemoine of Nancy, France, was recommended for election to corresponding membership in the Society.

The following named persons were duly elected to membership in the Society:

Augustus Bacon of Roxbury, proposed by E. B. Wilder.
John L. Smith of Swampscott, proposed by J. K. M. L. Farquhar.
William C. Briggs of Newton, proposed by H. E. Fiske.
Donald McKenzie of Brookline, proposed by E. B. Dane.
John McFarland of North Easton, proposed by N. F. Comley.
Charles A. Ufford of Dorchester, proposed by E. B. Wilder.
Fred'k W. Kelsey of New York, proposed by C. W. Parker.
W. Atlee Burpee of Philadelphia, proposed by C. W. Parker.
Mrs. William Edgar of Waverley, proposed by W. P. Rich.

October 7. On motion of Mr. Craig it was voted to transfer to the life membership list of the Society, with remission of the usual dues, the names of Mrs. Josephine L. Richards of West Medford and Patrick Norton of Dorchester. This action was taken in recognition of their services to the Society for many years past.

On motion of Mr. Saltonstall, a committee consisting of Mr. Kidder and the Secretary was appointed to consider the matter of an amendment to the By-laws relating to life membership.

On motion of Mr. Roland it was voted to refer to the President the appointment of a nominating committee to prepare a list of the committees of the Society for the ensuing year.

The President appointed as this committee Messrs. Wm. N. Craig, Chairman, Peter Fisher, and C. S. Sargent.

Mr. Craig brought up the subject of the appropriation for prizes and gratuities for the year 1912 and it was voted to defer the matter to the next meeting.

The following named persons were duly elected to membership in the Society:

Heinrich Unverhau of Marblehead, proposed by C. W. Parker.
Mrs. James G. Freeman of Boston, proposed by J. G. Freeman.
Frank D. Gavin of Manchester, proposed by G. R. White.
Miss Adeline Bradbury Gill of Medford, proposed by Mrs. E. M. Gill.
Miss Eliza M. Gill of Medford, proposed by Mrs. E. M. Gill.
Miss Marion Roby Case of Weston, proposed by F. W. Rane.

November 11. Communications from Mrs. J. L. Richards and Patrick Norton were presented acknowledging with thanks the

action of the Board in transferring them to the life membership list of the Society.

A communication from Miss M. R. Case was read asking if it would be acceptable if she offered a prize for large blueberries grown in Massachusetts. The communication was accepted.

A letter from Prof. E. A. White of the Massachusetts Agricultural College was read suggesting the appointment of a committee to represent the Society in the proposed extension of the work of the College. The letter of Prof. White was accepted and it was voted that a committee consisting of Messrs. Farquhar, Fisher, and Roland be appointed to represent the Society in the matter.

On motion of Mr. Farquhar it was voted to invite the National Sweet Pea Society of America to hold its next annual meeting and exhibition in connection with the Sweet Pea Exhibition of the Massachusetts Horticultural Society.

On motion of Prof. Sargent it was voted that a special committee consisting of Mr. Saltonstall and the Secretary be appointed to consider the method of the accounting of the trust funds of the Society and to report in detail at a future meeting.

On motion of Mr. Pettigrew it was voted to appropriate the sum of $6,000.00 for prizes and gratuities for the year 1912.

The special committee appointed to present a list of nominations for the various committees of the Society for the ensuing year reported through its chairman, Mr. Craig, the following list:

Standing Committees for 1912.

Finance:— Walter Hunnewell, Chairman, Arthur F. Estabrook, Stephen M. Weld.

Prizes and Exhibitions:— John A. Pettigrew, Chairman, Robert Cameron, William Downs, J. K. M. L. Farquhar, M. A. Patten, Wilfrid Wheeler.

Plants and Flowers:— T. D. Hatfield, Chairman, Arthur H. Fewkes, William Nicholson, Thomas Roland, William C. Rust, William Sim.

Fruits:—Edward B. Wilder, Chairman, William Downs, Wilfrid Wheeler.

Vegetables:— Duncan Finlayson, Chairman, Wm. N. Craig, Edward Parker.

Gardens:— Charles W. Parker, Chairman, Jackson Dawson, Arthur H. Fewkes, Thomas J. Grey, T. D. Hatfield, William Nicholson, William P. Rich, David F. Roy, Charles Sander, William Thatcher, Wilfrid Wheeler.

Library:— Charles S. Sargent, Chairman, Ernest B. Dane, George B. Dorr, Charles S. Minot.

Lectures and Publications:— William J. Stewart, Chairman, Robert Cameron, J. K. M. L. Farquhar, Edward B. Wilder.

Children's Gardens:— Henry Saxton Adams, Chairman, Joseph Clark, Harry S. Rand, William P. Rich, B. Hammond Tracy, James Wheeler.

It was voted, on motion of Mr. Farquhar, that the list as presented by the committee on nominations be accepted and adopted.

Prof. Sargent, for the special committee on the award of the George Robert White Medal of Honor for the year 1911, reported the name of Victor Lemoine of Nancy, France. The report of this committee was accepted and it was voted to award the George Robert White Medal of Honor for the current year to Victor Lemoine of Nancy, France, in recognition of his eminent service in the interest of horticulture.

Prof. Sargent called attention to the deficiency of books on landscape gardening in the library and on his motion a special appropriation of $200.00 was voted for the purchase of books for this department of the library.

On motion of Mr. Kidder it was voted to add Mr. Saltonstall to the special committee on the proposed amendment to the By-laws relating to life membership; and it was further voted that this committee consider and report on the advisability of any other amendments.

Mr. Craig called attention to the work of the Gardeners' and Florists' Club of Boston which meets once a month in Horticultural Hall. He said that much inconvenience had been experienced through the rental of the Hall for other purposes on the evenings of the club meetings and asked that the use of the Lecture Hall be reserved for the club on regular dates.

Mr. Farquhar spoke in favor of the suggestion of Mr. Craig and on his motion it was voted to grant the exclusive use of the Lecture Hall to the Gardeners' and Florists' Club of Boston on the third Tuesday of the month, with the exception of such occasions as the rental of the Hall for two or more days at one time, or of rental of the entire building, when fifteen days notice of such rental shall be given to the club.

The following named persons were duly elected to membership in the Society:

Ralph B. Williams of Boston, proposed by J. G. Freeman.
John T. Burnett of Southboro, proposed by A. F. Estabrook.
Dexter M. Rogers of Allston, proposed by W. P. Rich.

William P. Rich,
Secretary.

REPORT OF THE COMMITTEE ON PRIZES AND EXHIBITIONS FOR THE YEAR 1911.

BY JOHN A. PETTIGREW, CHAIRMAN.

Your Committee on Prizes and Exhibitions submits the following report on the work of the Society for the past year:

Exhibitions were held as follow:

Midwinter Flower Show, February 24, 25, 26.

May Exhibition, May 20, 21.

Rhododendron Exhibition, June 10, 11.

Rose, Peony, and Strawberry Exhibition, June 24, 25.

Sweet Pea Exhibition, July 15, 16.

Summer Exhibition, August 19, 20.

Children's Garden Products Exhibition, September 2, 3.

General Autumn Exhibition, September 8, 9, 10.

Special Vegetable Exhibition, September 21 to 24, inclusive.

Chrysanthemum Exhibition November 9 to 12, inclusive.

The exhibitions of the past season, taken as a whole, with the exception of the vegetable show, were not so large as usual. This was due, in a great measure, to the long-continued heat of the summer. Another contributory cause resulted from the desire of the growers to save their energies for the great national show held in Boston. However, on the whole, the quality of the material shown was very good.

At the September Show, the dahlias were especially fine, while the grapes exhibited by Thomas E. Proctor (James Marlborough, gardener) were exceptional; probably it was the best exhibit of that fruit ever staged in Boston.

The special vegetable show in September brought together the best collection of vegetables ever seen in the Hall. The public showed a high appreciation of it, as evinced by the attendance.

The Gladiolus Show. Good exhibits of gladioli were displayed at the August exhibition, including fine novelites. Potted fruit

trees, plums, apples, and pears, also were very interesting and well done. A fine show of annuals lent interest.

The Farquhar Brothers, as usual, took a leading part in prize getting, by their superb collections of herbaceous plants, and showed frequently their generosity and public spirit, by voluntary and free contributions of decorative plants, to embellish vacant spaces on the exhibition walls. One of Farquhar Brothers' interesting exhibits was a lot of E. H. Wilson's new lilies, from northern and western China, and a beautiful lot of *Lilium leucanthemum*, one of the best of the garden lilies.

Mr. Robert Cameron, aside from his efficient services as superintendent of exhibitions, often came to the front when decorative plants were much needed.

Mr. M. H. Walsh, as usual, led in exhibits of the rose, as did Mr. Walter Hunnewell (T. D. Hatfield, gardener) with peonies.

The total net earnings of the exhibitions, for the season, were $414.40. The Society has trust funds in over twenty legacies, amounting to about $50,000, the earnings of which are to be applied, in a general way, to the promotion of horticulture, mostly in prizes for excellence in flowers, fruits, and vegetables. It is the intention of your committee to give more publicity to this fact, by marking the winning exhibits in such a way as to call closer attention to them and the story they tell. Due credit will be given to the donor, which may serve as a suggestion to those who might be desirous of encouraging horticulture in some such manner.

John A. Pettigrew
John K. M. L. Farquhar
Robert Cameron
William N. Craig
J. Willard Hill
M. A. Patten

Committee on Prizes and Exhibitions.

REPORT OF THE COMMITTEE ON PLANTS AND FLOWERS FOR THE YEAR 1911.

By T. D. Hatfield, Chairman.

The exhibitions of the year 1911 have been hardly up to the Society's standard of excellence. There has been for some years a gradual change in the character of the exhibitions, especially of plants and flowers, and in this respect two things can be distinctly recognized: First, that the private gardener is not doing his full share in making the flower shows more successful, and second, our dependence upon trade exhibits. This is not a very satisfactory situation, not that we should object to commercial exhibits, but that we are dependent upon them. We often wonder what some of our exhibitions would be without these trade exhibits. One notable firm has wisely, we believe, refused to accept gratuities in the shape of money. This is the proper position for the trade to take. The advertisement gained at the exhibitions of this Society ought to be enough. Some trade people have been competitors and have received liberal gratuities because, in the opinion of the committee, these would be acceptable and also because the committee thought it good policy to thus secure their continued interest in our exhibitions.

January 7, Duncan Finlayson of the Weld Garden, Brookline, was awarded a Cultural Certificate for a group of Calanthes, including *Calanthe Sandhurstiana*, a deep rose colored variety; *C. vestita oluteo culata*, a creamy white with yellow center; *C. vestita rubro oculata*, rosy; George McWilliam's hybrid, *C. Veitchii* × *C. Regnieri*, much like *C. Regnieri*, but earlier; and C. Cornelius Vanderbilt (*C. vestita rubro oculata* × *C. Veitchii*).

Besides these Mr. Finlayson showed *Cymbidium Holfordianum* (*C. eburneum* × *C. Hookerianum*). It is handsomer than either of its parents, a creamy white at opening, changing to pure white with age.

Ernest B. Dane (Donald McKenzie, gardener) showed some

handsome Cypripediums: *C.* × *Merlin magnificum,* for which a Silver Medal was awarded; *C. insigne*; *Sanderianum* × *Leeanum*; and *C. insigne nigrum,* for which a First Class Certificate was awarded.

January 14, William Whitman (Martin Sullivan, gardener) made a handsome display of Chinese Primulas.

January 21, Walter Hunnewell showed a new seedling Laelio-Cattleya — *L.-C. Clancyana* — (*Laelia elegans* × *Cattleya Minucia*), sepals and petals pale lilac, throat nearly white, lip pale lilac with deeper markings of lilac purple, practically self colored.

It may not be out of place here to comment on the increasing difficulties in orchid nomenclature and other matters relating thereto. It is argued by orchid growers and raisers that because a certain cross has been made between two orchids, say two Cattleyas or a Laelia and a Cattleya, and progeny raised and named, that any others of that cross are from that fact the same thing and should have the same name.

This argument would not hold in the hybridization of other plants, and naturally it should not, and does not among orchids. In the cross made which resulted in *L.-C. Clancyana* we have had two other seedlings bloom and they bloomed when *L.-C. Clancyana* was in flower for the second time, enabling us to make very interesting comparisons. All three are very distinct, though showing coloring and form peculiar to both parents and their antecedents, for both parents were hybrids. Each was as much worth a distinctive name as the other, and the question one naturally asks is what limit can there be to the naming of every hybrid raised, and how can we here tell whether what we make awards to are really distinct, or have not been already recognized elsewhere.

We take this opportunity to suggest that the Society appoint an Orchid Committee, for we feel that the Plant and Flower Committee, as now made up, cannot do the judging of orchids, especially new or rare ones, in an efficient manner.

February 4, Mr. Dane showed Cypripedium Olivia (*C. tonsum* × *niveum*). The whole flower is pale pink with deeper lines and the pouch reminds one very much of that of *C. spectabile.* He also exhibited *C. Minos Youngii* (*C. Arthurianum pulchellum* × *C. Spicerianum*), a large flower, upper petal striped and tinted as in *C. Spicerianum,* bronzy lower petals and pouch.

The Midwinter Flower Show.

The Midwinter Show was held on February 24 and took the place of the Spring Show, which was once one of the most important of the year. It was much below the average. Roses and carnations were badly missed. There was only one entry for roses, and many classes were not filled, and in others no competition.

William Whitman (Martin Sullivan, gardener) was the principal exhibitor of bulbous plants and in some classes the only one. It is very gratifying to state that, as usual, his exhibits were of a high standard of merit.

His best hyacinths were Garibaldi, pink; La Grandesse, white; and King of the Blues. Of tulips, Joost van Vondel, white; Mon Tresor, yellow; Duchess of Parma, orange; Pink Beauty and Proserpine, rose; Couleur Cardinal, red; Van de Neer, purple; Keizerkroon, red and yellow.

Mr. Whitman's Collection of Narcissi included, among Trumpets, Emperor, Golden Spur, Horsfieldii, Mme. de Graaf, Princeps Maximus, Trumpet Maximus, Vanilla, and Victoria. Medium Trumpets were, Barri Conspicuous, Barri Flora Wilson, Incomparabilis Autocrat, Incomparabilis Beauty, Incomparabilis Sir Watkin, Incomparabilis Princess Mary. Of the Leedsii type, Leedsii Duchess of Brabant, L. Katherine Spurrell, L. Minnie Hume, and L. Mrs. Langtry.

A. W. Preston (John L. Smith, gardener) put up a neatly arranged display of spring flowering plants, including Indian azaleas, *Acacia heterophylla, Primula obconica, Erica melanthera,* marguerites, Narcissii, Cinerarias, palms, tulips, and Schizanthus.

W. P. Harvey, gardener to J. R. Leeson, Newton Center, showed an extra fine specimen of *Cymbidium Tracyanum* and was given a Cultural Silver Medal. The plant had 15 spikes with 167 open flowers. The flowers are brown striped, with a marbled-yellow lip.

R. & J. Farquhar & Co. had some new plants from China, including *Clematis montana rubens,* with light pink flowers and handsome bronzy foliage. Also, a dwarf flowering cherry (*Prunus Cerasus Wilsoni*) with white flowers. It promises to be a distinct and showy plant for the front of the shrubbery border.

Primula obconica from Mr. Lothrop Ames of North Easton was distinctly good, as were also Cyclamens from William Whitman.

Dr. C. G. Weld showed a neat specimen of *Dendrobium virginale.*

From Mrs. Frederick Ayer (George Page, gardener) came nice specimens of hardwooded plants. Noteworthy among them were *Acacia heterophylla, A. verticillata, Erica melanthera, E. Caffra, and E. meditteranea.* An extra fine specimen of *E. melanthera* was awarded a Cultural Certificate.

Mrs. J. L. Gardner had some very nice specimen Cinerarias.

Ernest B. Dane (Donald McKenzie, gardener) made a superb exhibit of Cypripediums, among which were the following:

C. aureum Rex, rare, bronze sepals, petals and pouch, upper petal pink; *C. aureum Oedippe,* larger and deeper colored than the preceding; *C. Mandiae magnificum* (*C. Lawrencianum Hyeanum* × C. *Callosum Sanderae*), in character of flower it was fairly intermediate between the two. It had handsome tassellated and mottled foliage, a distinct feature; *C. aureum virginale* × *Acteus,* a dwarf grower, flowers large, petals pink, upper petal light buff pink, beautiful; C. Gay Gordon × (Lady Wimborne and Thomsonianum, a bronzy flower, peculiar; *C. Venus* (*C. niveum* × *insigne Sanderae*), flowers nearly white, finely dotted with violet.

March Exhibitions.

March 5, John McFarland was awarded a Silver Medal for a seedling orchid — Cattleya John McFarland — (*C. Dowiana* × *C. Lawrenciana*), the last named showed distinctly in the cross. Later in the season Mr. McFarland showed another seedling from the same parents which showed decidedly different characteristics.

At the National Flower Show held in Mechanics Building, March 25 to April 1, the Massachusetts Horticultural Society awarded three Gold Medals, and six Silver Medals for the most meritorious exhibits there.

A Gold Medal was awarded W. A. Manda of South Orange, New Jersey, for a magnificent display of tropical plants. The group included excellent specimens of *Encephalortos pungens glauca, Anthurium Andreana, A. Brownii, A. Reynoldiana,* and

A. carneum. There were 15 species and varieties of Dracaenas, including *D. Rothiana, D. Mandaiana,* D. Bronze Beauty, *D. Shepherdii, D. Lindeni, D. Victoriae, D. Godseffiana, D. Youngii,* D. Dr. Smith, and D. Black Beauty; *Ficus pandurata, Pandanus Sanderiana, Bougainvillea Harrisii, Anglaonema Roebeliana, Phyllotaenium Lindeni, P. magnificum, Cyathea medullaris, Cibotium Scheidii, Cibotium glaucum, Polypodium Mandaianum, Polypodium aureum, Davallia Mooreana, Platycerium Alcicone,* var. *biformis, Platycerium Hillii* var. *Major, Nephrolepis exaltata* in many varieties, *Kentia Canterburyana, K. Mandaiana, K. Aurescens, K. Belmoreana, K. Fosteriana, Rhapis flabelliformis, R. humilis, Phoenix Roebelinii, R. rupicola, Licuala grandis, Chamaedora elegans, Levistonia rotundifolia, Latania Borbonica, Cocos plumosus, C. Bonnetti, Areca lutescens,* and *A. Verschaffeltii.*

A Gold Medal was awarded Thomas Roland for a grand display of hardwooded plants. The collection was especially rich in Acacias, including *A. affinis, A. armata, A. cultriformis, A. pendula, A. Baileyana, A. cordata, A. dealbata, A. grandis, A. hispidissima, A. lineata, A. longifolia, A. longifolia,* var. *magnifica, A. ornata, A. paradoxa, A. pulchella, A. pubescens,* and *A. floribunda.* Among Heaths were *Erica melanthera, E. cupressina, E. codonodes Veitchii, E. urceolaris, E. ventricosa, E. ventricosa major, E. ventricosa magnifica, E. persoluta alba,* and *E. persoluta rosea.*

A Gold Medal was awarded R. & J. Farquhar & Co. for a Dutch Garden. All the accessories required were present, even to the Dutch attendant in sabots. It certainly was a beautiful picture and did James Farquhar and his assistants great credit. The main feature was Dutch bulbous plants, which were admirably set off by the use of foliaged and other flowering plants.

A Silver Medal went to Clement Newbold of Germantown, Pennsylvania, for two immense specimens of *Azalea indica — alba* and *Iveranna.*

A Silver Medal to Professor Sargent for a unique display of hybrid Imantophyllums.

A Silver Medal to Thomas Roland for a Rose Garden. This was most effectively done by the use of trellises, arbors, flower beds, and neat paths. Among the varieties of Rambler roses used were: Lady Gay, Crimson Rambler, Dorothy Perkins, White Dorothy

Perkins, Hiawatha, American Pillar, Mrs. W. A. Richardson, Paradise, and Baltimore Belle. Among bushy kinds were Mrs. Cutbush, Baby Rambler, Perle d'Or, Mignonette, Catherine Ziemet, Clothilde Soupert, Hermosa, Irish Elegance, and Amy Muller.

A Silver Medal was given M. H. Walsh for a collection of specimen Rambler roses. This was an unusually fine exhibit and did great credit for the excellent way the plants had been prepared, were transported, and held throughout the exhibition; not least of all was the fact, that of all the varieties shown, eighteen were raised by the exhibitor.

Here follows a list of the varieties in Mr. Walsh's exhibit:

Arcadia, Celeste, Coquina, Delight, Excelsa, Hiawatha, Kalmia, Lady Blanche, Lady Gay, Lucile, Milky way, Minnehaha, Maid Marion, Mrs. M. H. Walsh, Paradise, Summer Joy, Troubadour, and Winona.

A Silver Medal went to Mrs. Frederick Ayer (George Page, gardener) for a display of Acacias and heaths. The group was neatly staged and was a great attraction. Acacias were *A. paradoxa, A. pulchella, A. Drummondii, A. longifolia, A. hybrida,* and *A. heterophylla.* Ericas were *E. arborea, E. persoluta alba, E. urceolaris, E. melanthera,* and *E. meditteranea.*

Sidney Hoffman was awarded a Silver Medal for a miniature Topiary Garden which was well worked out and at the same time forming a very cosy retreat.

May Exhibition.

On May 20 the Messrs. Farquhar made an attractive display of May-flowering tulips and narcissi. They also showed a new *Campanula persicifolia* called Fairy Queen; white and said to be a continuous bloomer; also *Lilium myriophyllum* which received Honorable Mention. It has a large white flower with a yellow throat. This is one of the best of several new lilies collected by Mr. E. H. Wilson in China. The Arnold Arboretum sent a large collection of spring-flowering shrubs, including lilacs, Halesia, Forsythias, Spiraeas, Deutzias, and *Azalea Kaempferi.*

Fancy Pelargoniums shown by William Whitman included

Purity; Alice Love, light rosy pink; Duke of Fife, red and white tinted; Linda, salmon-red; and two pretty seedlings.

Mrs. John L. Gardner also had some nice specimen Fancy Pelargoniums. Among them were, Mandarin, light pink; Satanella, deep pink; Duchess of Teck, deep salmon-red, and Maid of Honor, white.

Among Mr. Whitman's Zonal Pelargoniums were Richmond Beauty, red, with white shadings; Sidar, red; Claire Frenot, light pink; Jacquire, crimson; and Prince Olaf, light pink.

Edward A. Clark (Alex McKay, gardener) showed some extra good specimens of herbaceous Calceolarias; also the small yellow-flowered *C. rugosa*. The new hybrid *C. Stuarti* was shown by Dr. C. G. Weld (Wm. C. Rust, gardener).

Dr. Weld exhibited a seedling *Laelio-Cattleya* (*Hyeana* × *L.-C. Canhamiana*). It looked like a very fine form of *Cattleya Lawrenceana*.

A very fine specimen of *Cattleya citrina* from Miss Cornelia Warren (H. Stuart, Gardener) received a Cultural Certificate. Mrs. J. L. Gardner made a neat stand of orchids with *Cattleya Skinneri*, *C. mossiae*, Cypripediums, Masdevallias, and others.

Mrs. E. M. Gill showed cut flowers — Alyssum, sweet peas, marguerites, stocks, lilacs, lily of the valley, and petunias.

Mrs. Frederick Ayer had a very fine specimen of *Oncidium sphacelatum*; Edward A. Clark, American Beauty roses; and Dr. C. G. Weld a specimen *Hydrangea hortensis*;

A. W. Preston was awarded a Silver Medal for an extra fine plant of *Hydrangea Otaksa*.

The Blue Hill nurseries showed an instructive lot of cut lilac blooms. Among them were Michel Buchner, blue; Marie Lemoine, white; Belle de Nancy, reddish, white tinted; Souvenir Ludwig de Spath, red, blue tinted; Mme. Briot, violet; Souvenir Louis de Thibaut, blue; Obelisque, white; Mme. Abel Chatenay, white; Marleyense, blue; Frau Bertha Damman, white; President Carnot, blue, red tinted; Mme. Casimere, white; President Grey, blue; Charles Joly, deep purple; Mme. Leon Simon, blue; Mirabeau, deep purple; and De Marley, light blue.

June Exhibitions.

June 10 was the date set for the Rhododendron and Peony Show. Peonies formed the bulk of the flowers shown and were in excellent condition, considering the unfavorable weather. A Vote of Thanks was made to Walter Hunnewell and a gratuity to Mrs. J. L. Gardner for displays of rhododendrons.

R. & J. Farquhar & Co. was awarded a Silver Medal for a select lot of peonies. William Whitman and Mrs. J. L. Gardner also had meritorious displays of peonies. E. J. Shaylor of Weston, was awarded a Gold Medal for "present and previous exhibits of peonies, and for high culture, and correct nomenclature." This was a well-merited honor.

The Harvard Botanic garden, Robert Cameron, superintendent, had an interesting tank of water lilies. Among them were, *Nymphaea aurora, N. Gladstoniensis, N. Marliacea* var. *albida, N. Marliacea rosea, N. Marliacea chromatella, N. Marliacea carnea,* and *N. Robinsonii.*

Wilton Lockwood of South Orleans showed the new and rare peony, L'Esperance; F. J. Rea, a new herbaceous aster, Beaute Parfaite, which is as near sky blue, as could be imagined; and the Messrs. Farquhar a collection of tree peonies.

A Cultural Certificate went to J. T. Butterworth of Framingham for a splendid specimen of *Cattleya Mendelii* var. *Morganiana,* and a Bronze Medal for a very fine specimen of *Miltonia vexillaria.*

The Langwater Gardens, Wm. N. Craig, Superintendent, showed three seedling orchids: *Cattleya Loddigesii* × *Laelia purpurata.* All showed the cross distinctly. Two had white sepals and petals with magenta lip and yellow throat; the other, suffused pink sepals and petals, and yellow throat.

A Silver Medal was awarded Walter Hunnewell for seedling *Laelio-Cattleya Wellesleyana* (*Laelia elegans* × *Cattleya Mossiae Reineckiana*; whole flower pure white excepting a faint line of violet purple on the throat.

The Rose Show was held on June 24. It was much below the average. But for Miss Fay and M. H. Walsh of Woods Hole, it would hardly have been worth the name. Peonies again were

the most important feature. Messrs. Shaylor, Farquhar, Whitman, and the Thurlow Company were the largest contributors.

For roses the prize for the best three blooms, white, was won for Frau Karl Druschki; best three blooms, pink, Mrs. John Laing; best three blooms red, Ulrich Brunner; best new Hybrid rose offered since 1900, Frau Karl Druschki.

Hybrid Tea roses were shown by Miss S. B. Fay; and the best were Antoine DeVoire, rosy flesh; Avoca, velvety crimson; Caroline Testout, satiny rose; Betty, coppery rose; Mme. Abel Chatenay, carmine rose, shaded salmon; La France, light pink; La Tosca, soft pink, shaded rose and yellow; Miss Cynthia Ford, rose pink; and Killarney, pink.

Among Miss Fay's best Hybrid Perpetual roses were Heinrich Schultheis, soft pink; Hugh Dickson, crimson; Mrs. R. G. S. Crawford, rosy pink; Merveille de Lyon, white, shaded rose; Jubilee, very deep maroon; Prince Arthur, crimson; Ulrich Brunner, red; Mrs. John Laing, pink; Urania, deep red; Mme. Gabriel Luizet, pink; Margaret Dickson, white; Perfection des Blanche, white; and Marie Baumann, red.

The Messrs. Farquhar had some unusually fine peonies, including Richardson's Perfection, light pink; L. B. Hayes, pink; Baron Schroeder, white; Albotre, white; Dorchester, light pink; Marechal Vailliant, deep pink; Henry Fourth, white; Claire Dubois, light pink.

Among Mr. Shaylor's superb collection were Rosa Bonheur, Tourngalle, Milton Hill, Marie Lemoine, Emperor Nicholas, Mme. Galhau, Asa Gray, Model of Perfection, and Richardson's Rubro Superba.

The Messrs. Farquhar showed herbaceous flowers: Pentstemons, *Heuchera sanguinea*, *Hemerocallis flava*, *Oenothera speciosa*, Spiræa Excelsior, *Campanula glomerata*, *C. persicifolia alba*, *C. persicifolia Moerheimii*, Canterbury bells, *Lychnis chalcedonica*, *Coreopsis grandiflora*, *Digitalis ambigua*, and *Astilbe chinensis*.

J. T. Butterworth sent some well-grown orchids — *Cattleya Mendelii × Brassavola Digbyana*, chrome yellow, sepals and petals suffused with purple; *Cattleya Gaskelliana × Harrisoni alba*, light mauve sepals and petals, pale yellow throat, very pretty; this hybrid did not appear to resemble either parent; *Laelia purpurata*

× *Brassavola Digbyana,* sepals and petals light mauve, yellow throat.

Mrs. Gill made an attractive display of cut flowers.

July Exhibitions.

On July 1 Mrs. Dolbear of South Braintree exhibited some pretty seedling Crimson Rambler × R. Wichuraiana roses, and William Whitman collections of seedling larkspurs and Japanese iris.

The Sweet Pea Show came on July 15. Owing to extremely hot weather sweet peas generally were a failure. There were only two competitors and both were from Taunton.

The best white variety appears to be Gladys Unwin; best light pink, Countess Spencer; blue, Navy Blue; lavender, Flora Norton; crimson, George Washington; orange, Helen Lewis; orange red, King Edward.

The Messrs. Farquhar again showed the beautiful *Lilium myriophyllum,* this time from the open ground. It is different from any lily hitherto introduced, is perfectly hardy, and promises to be a distinct and valuable acquisition.

The Messrs. Farquhar had also a display of herbaceous flowers including Tritonias, *Silphium perfoliatum, Anthemis tinctoria, Monarda didyma, M. fistulosa, Asclepias tuberosa, Lathyrus latifolius* White Pearl, Centaureas, Rudbeckias, Delphiniums, *Hemerocallis aurantiaca major, H. lateola,* and a selection of choice Japanese irises.

Mrs. Gill made a display of sweet peas, hollyhocks, peonies, Delphinium, Phloxes, Asclepias, roses, *Gypsophila paniculata,* and dahlias.

Dr. Harris Kennedy of Milton received Honorable Mention for an exhibit of the Japanese method of displaying iris. It was simply dishes of water with lead holders made in the shape of small turtles. The beauty of the arrangement was in being able to give any alignment to the flower stems desired for effect.

On Saturday, July 22, the Messrs. Farquhar exhibited one of Wilson's Chinese lilies. It has been named in honor of the Far-

quhars, *Lilium Farquhari.* It is a remarkably robust-growing species, six to seven feet high, carrying six to ten flowers, six or seven inches long, and the same across the face. The flowers are white with greenish bands on the outside, tips shortly recurved, and the flower is strongly scented. A Silver Medal was awarded.

August Exhibitions.

On August 12, Walter Hunnewell was awarded a Silver Medal for seedling Cattleya Waban (*C. Warneri* × *C. gigas*). Flowers very large, sepals and petals light rose, lip crimson-purple, sweet scented, handsome.

August 19. This was a good show.

The Messrs. Farquhar had an excellent display of herbaceous flowers and the color effect was good. It included the following species and varieties: Rudbeckia Golden Glow, *Campanula persicifolia alba, Rudbeckia speciosa, Hemerocallis luteola,* a lovely pale yellow flower, *Lythrum Salicaria roseum, Helianthus rigidus, Callirhoe involucrata, Statice Gmelini, Aconitum autumnale, Boltonia latisquama, Lilium speciosum, Monarda mollis, Rudbeckia purpurea, Clematis Davidiana, Euphorbia corollata, Veronica longifolia, V. subsessilis, Liatris pycnostachya, Heuchera sanguinea, Vernonia novaeboracensis, Pentstemon barbatus Torreyi, Coreopsis lanceolata, Campanula pyramidalis, Calimeris incisa,* and *Calluna vulgaris,* called sometimes Scotch heather. Besides these this firm also showed some of their new lilies from China, including what was called *Lilium leucanthemum.* This is a robust-growing species from China, introduced by collector Wilson. It was first shown by Walter Hunnewell of Wellesley, who had specimens seven feet high, with ten to twelve flowers which open buff, later changing to white.

A botanical examination has proved it a distinct species and it has been named in honor of Mrs. C. S. Sargent. They also made a fine display of *Lilium auratum, L. Batemanae,* and *L. Henryi*; other Chinese plants, not hitherto exhibited, were a yellow-flowered Clematis, unnamed; *Clematis althusifolia,* white; and *C. ligustifolia,* also white.

A First Class Certificate was awarded R. & J. Farquhar & Co.

for a new *Viola cornuta* var. *purpurea.* The flowers were a rich purple, and it promises to be a valuable bedding variety.

A table of herbaceous phloxes, and *Lilium tigrinum* came from William Whitman, and also a very effective one of mixed flowers, mostly annuals — Zinnias, marigolds, Scabios, sunflowers, Celosia, Antirrhinums, and Rudbeckia Golden Glow.

The T. C. Thurlow Company showed herbaceous phloxes; the best were Mme. Meuret, Le Pole du Nord, Le Soleil, Mme. Papa Carpentier, Saison Lierval, Stellas Choice, Elizabeth Campbell, Mme. Paul Dutree, Baron von Devan, B. Comte, Brunette, and Le Feu de Monde.

Mr. Whitman's phloxes were, La Candeur, white; Le Feu de Monde, red; Le Soleil, rose; Richard Wallace, white, pink eye; Stellas Choice, white; L'Esperance, lilac; R. P. Struthers, salmon-red; Aglae Adamson, white, red eye; Charles Darwin, salmon-pink; La Neige, white; and Mme. Meuret, red.

F. J. Rea had some promising new and unusual phloxes — Antoine Mercie, white; Dawn, delicate, pink; Gen. Chanzy, scarlet; M. Langier, salmon-pink; and Richepin, white.

Mrs. E. M. Gill had a table of annuals — dahlias, phloxes, larkspurs, petunias, and marigolds.

Mrs. J. L. Gardner's table of annuals is one of the features of every August show. It was admirably set up and attracted a good deal of attention. Among them were stocks, asters, zinnias, Helichrysum, marigolds, Indian pinks, Scabios, candytuft, *Phlox Drummondii,* portulaccas, *Matthiola bicornis,* Nigella Miss Jekyll, Celsosia, and several others.

Mr. Montague Chamberlain of Groton made an extensive display of new and rare gladioli; Rajah, crimson, was awarded a Silver Medal; Niagara, buff, a First Class Certificate. Besides the above, Mr. Chamberlain had Glory, cream colored; Laconia, bright pink; Margaret, crimson; Mrs. F. King, bright red; Sulphur King; Canary Bird; Baron Hulot, purple; Reine Blanche, white; Isabel, white, suffused pink; Princeps, bright red; Margot von Quaita, white, with pink tips; Dora Krais, buff pink; Europa, white; Hohenstaufen, white, pink markings; Wild Rose, pink and white; Meteor, deep orange; Dawn, salmon pink; and Mrs. Frank Pendleton, salmon-pink, suffused white, crimson blotch.

W. P. Lothrop of East Bridgewater showed a very fine orange-colored Cactus dahlia named Lothrop's Seedling and was awarded a First Class Certificate.

September and October Exhibitions.

September 8. What was once the Autumn Show of stove and greenhouse plants is now the Dahlia Show. The Schedule calls for herbaceous plants and Tea roses. There were no entries for these and very few herbaceous flowers among the general displays. There was a good exhibition of dahlias, but the blooms generally were not up to the average.

The committee has always had some difficulty in judging the classes of Show, Fancy, and Decorative. All three classes run one into the other and they can be graded all the way. It is possible to have Show and Fancy on the same plant, by "sporting." The typical Decorative flowers open more at the tips of the florets than they should for admission properly into the Fancy class, yet some varieties come so near this class, that it is hard to find a place for them. It was suggested by several of the dahlia fanciers at the exhibition that this variation in the Decorative varieties be made the basis for a class by themselves.

As stated above, Show and Fancy blooms often grow on the same plant and these two should be merged.

B. Hammond Tracy of Wenham had an artistic display of gladioli, including the very best grown and several seedlings of his own.

Among Mr. Tracy's best were America; Augusta, white; Bluejay; Daybreak; Dawn; Fireside; Gil Blas, salmon-rose; Harvard, red; Independence, rose-pink; Isaac Buchanan, yellow; Kathryn, orchid-flowered, rosy heliotrope with white throat and veinings, a most beautiful variety; Mme. Butterfly, yellow, flecked with rose; Maiden Blush; Mephistopheles; Mrs. Beecher, rosy crimson; Mrs. Lancashire, cream; Mrs. Francis King, flame pink; Niagara, yellow; and Princess Sandersoni, white, pencilled crimson.

The new and distinct *Gladiolus primulinus*, said to be a native of South Africa, was on exhibition, and received Honorable Mention.

The Messrs. Farquhar received Honorable Mention for a display of garden lilies, including *L. Henryi, L. speciosum, L. auratum,* and some of the new Chinese kinds.

Mrs. Frederick Ayer had a fine specimen tree fern, *Cibotium Scheidii,* as well as a neat lot of other ferns and Crotons.

William Whitman received a gratuity for a handsome display of cut flowers, including asters, Celosia, gladioli, sunflowers, Heleniums phloxes, zinnias, and marigolds, set off with tall grasses.

Mrs. E. M. Gill had a pretty table of cut flowers — dahlias, marguerites, phloxes, roses, clematis, petunias, and sunflowers.

J. K. Alexander's general display of dahlia blooms was very large and attractive. It occupied six tables.

J. H. Flint of Salem received a First Class Certificate for a handsome Decorative dahlia — light pink, salmon shaded, named Dorothy Flint; and Honorable Mention for a new red Show variety, named Hetta.

George B. Gill was awarded Honorable Mention for a handsome maroon-colored Cactus dahlia named Mrs. E. M. Gill, and Forbes and Keith of New Bedford were awarded a First Class Certificate for a rose-pink seedling Cactus dahlia named Endymion. Both these Cactus dahlias are of the highest type, and are considered by experts quite an achievement for American raisers. Cactus dahlias do not come easily.

A First Class Certificate was awarded Walter Hunnewell for *Laelio-Cattleya Gottoiana* var. *Wellesleyensis* which may be described as a very fine dark-colored form of *L. C. Gottoiana*; the parentage is *Laelia tenebrosa* × *Cattleya Warneri.*

On October 7 John McFarland of North Easton showed a new seedling Cattleya — *C. Lawrenciana* × *C. Dowiana*; sepals and petals lavender, lip unusually large, much curled and twisted, in the way of *Brassavola Digbyana,* although it did not have the fringe characteristic of a Digbyana cross. It had however, its greenish-yellow throat. As orchid parentage is becoming so much entangled, it is difficult to tell what will come of any crosses made. It was a distinctly handsome specimen and a Silver Medal was awarded.

THE CHRYSANTHEMUM SHOW, 1911

The Chrysanthemum Show.

November 9–11 was the date set for the annual Chrysanthemum Show. The only trained specimen plants shown came from the estate of Thomas E. Proctor of Topsfield. Col. Harry E. Converse of Marion had the only short-stemmed specimen blooms. Mrs. E. A. Clark showed long-stemmed blooms in the Society's vases, and was the principal exhibitor of large blooms. The W. W. Edgar Company of Waverley had some very good blooms of Major Bonaffons.

James Nicol of Quincy exhibits every year for Henry A. Gane Memorial Premium. This prize was left by the late H. A. Gane of West Newton for exhibits of Mrs. Jerome Jones and its sports. This variety was raised by Mr. Gane. It is a very handsome white-flowered Japanese variety. Mr. Nicol's blooms have always been of a high standard of merit and this season the committee awarded him a Cultural Silver Medal.

Among Mr. Proctor's specimen plants was a very fine specimen of a new single white variety raised at Topsfield and named Emmy Lou. To this a First Class Certificate was awarded.

The best of the long-stemmed blooms were Mrs. Wm. Hankey, Pink; Mrs. Jerome Jones, White; Major Appleton, yellow; Beatrice May, white; Rose Pocket, bronzy; and Morrison, red.

William H. Elliott's commercial plants were excellent, including Jos. H. White, white; John Shrimpton, red; Ethel Robinson, pink; Clinton Chaffaut, yellow; Garza, white; Savannah, yellow; Mme. Perrin, pink; Dr. Enguehard, pink; and H. L. Sunderbruck, yellow.

There was a large variety of single-flowered chrysanthemums. The multiplication of names given to these is perplexing and it is a mistake to give every little variation a name.

The prize for the best arranged group of flowering and foliaged plants went to Edward MacMulkin. The plants used were palms, ferns, Pelargoniums, chrysanthemums, Crotons, Abutilons, Acalyphas, Cypripediums, Cattleyas, bay trees, rubber plants, Pandanus, Antirrhinums, and Grevilleas.

The W. W. Edgar Company also competed for the same prize.

They had if anything better plants, but their arrangement was not so good. Their plants included, Ardisias, palms, Begonia Gloire de Lorraine, bay trees, Cibotiums, Boston ferns, Adiantums, Cyclamens, Azaleas, Poinsettias, Crotons, chrysanthemums, oranges, Aspidistras, Dracaenas, Phoenix, *Ficus pandurata, Araucaria excelsa,* Marantas, and *Cocos Weddelliana.*

Thomas Roland sent a neat lot of commercial plants — oranges, Begonia Glorie de Lorraine and the white variety, Boston ferns, Cibotiums, Pandanus, heaths, Acacias, Crotons, Araucarias, Dracaenas, Ficus, and Ardisias.

Carnations came from Strout & Co. Biddeford, Maine. Besides the standard varieties there was a new one named White Wonder.

A. A. Pembroke of Beverly had a general collection of carnations of high quality, and one salmon-pink seedling named Beverly.

E. S. Webster of Chestnut Hill (William Downs, gardener) showed two new Begonias of exceptional merit — Winter Cheer, carmine, and Elatior, cerise-pink. It is difficult to trace the parentage of these handsome winter-flowering hybrids, but evidently *Begonia Socotrana* and some shrubby, possibly some tuberous (*B. bolivensis*) species enter into their make up.

Another distinct-looking Begonia of allied character was shown by E. H. Wetterlow, gardener to Mrs. Lester Leland of West Manchester. The parentage of this is *B. incarnata* × a tuberous variety. It shows *B. incarnata* distinctly and has the large crimson flowers of some tuberous variety.

A. N. Pierson of Cromwell, Connecticut, and S. J. Reuter of Westerly, Rhode Island, showed blooms of the improved White Killarney rose. From a commercial point of view we should consider it an improvement. Mr. Pierson sent also rose Killarney Queen, a beautiful shade of pink.

C. H. Totty of Madison, New Jersey, showed his new rose Sunburst, a tawny yellow, about the shade of the Gloire de Dijon rose.

A First Class Certificate of Merit was awarded Duncan Finlayson of the Weld Garden for a new Cattleya — *C. bicolor* × *C. labiata,* violet sepals and petals, deep maroon lips, handsome.

Wheeler & Company of Waban made a strikingly beautiful display of orchids. All his plants were specimens, including

Oncidium varicosum Rogersii, Phalaenopsis amabilis, Cypripedium Harrisonianum, Cattleya labiata and *Cattleya labiata alba, Brassavola acaulis, Miltonia Morelliana, Cypripedium Charlesworthii, Dendrobium formosum,* and *Oncidium tigrinum.*

Paul de Nave of Fall River had good plants of *Cattleya labiata, C. Trianae, C. Bowringiana, Miltonia Roezelii, Cypripedium insigne Sanderae, Dendrobium formosum, Oncidium triumphans,* and *Odontoglossum grande.*

Mrs. Frederick Ayer showed good specimens of *Phoenix Roebelini, Caryota urens,* and *Rhapis flabelliformis.*

J. T. Butterworth & Son of South Framingham had some nice Cattleyas, hybrid Laelio-Cattleyas, *Vanda caerulea,* Oncidiums, and Phalaenopsis.

H. H. Barrows & Son of Whitman put up a neat table of the compact form of the Whitman fern which is one of the many forms of the so-called Boston fern *Nephrolepis exaltata.*

William Sim of Cliftondale put up an attractive display of Trimardeau pansies.

The table decorations, as usual, attracted a good deal of attention. Opinions were almost equally divided between Sidney Hoffman's and Edward MacMulkin's tables. Hoffman's table was a symphony of yellow and bronze, but rather heavy. MacMulkin's white Garza and yellow Pompon chrysanthemums, and better balanced.

W. T. Walke of Salem, made an attractive pyramid of Gloire de Lorraine Begonias and ferns.

PRIZES AND GRATUITIES AWARDED FOR PLANTS AND FLOWERS.

1911.

January 7.

Gratuity:—

Mrs. J. L. Gardner, *Cattleya Trianae* (cut flowers), *Eranthemum pulchellum,* and Cactus-flowered Cineraria, $3.

JANUARY 14.

Gratuity:—

William Whitman, group of Chinese Primulas, $5.

MIDWINTER FLOWER SHOW.

FEBRUARY 24, 25, AND 26.

PRIMULA KEWENSIS.— Six plants in not less than seven-inch pots:
1st, Winthrop Ames, $5; 2d, Mrs. Frederick Ayer, $3; 3d, Winthrop Ames, $2.

PRIMULA STELLATA.— Six plants in not less than six-inch pots:
2d, Mrs. J. L. Gardner, $3.

PRIMULA OBCONICA HYBRIDS.— Six plants in not less than six-inch pots:
1st, Winthrop Ames, $6; 2d, Winthrop Ames, $3; 3d, Mrs J. L. Gardner, $2.

CYCLAMENS.— Twelve plants in not over seven-inch pots (commercial growers excluded):
1st, William Whitman, $15; 2d, Mrs. J. L. Gardner, $10; 3d, Mrs. Frederick Ayer, $6.

Six plants in not over ten-inch pots:
2d, Mrs. Frederick Ayer, $15.

HYACINTHS.— Six pans not exceeding ten inches in diameter, six bulbs of one distinct variety in each:
1st, William Whitman, $15; 2d, Mrs. J. L. Gardner, $10.

Single pan not exceeding twelve inches in diameter, with nine bulbs of one variety:
1st, Mrs. J. L. Gardner, $4; 2d, Mrs. J. L. Gardner, $3.

EARLY TULIPS.— Six eight-inch pans, nine bulbs of one distinct variety in each:
1st, William Whitman, $10.

Three eight-inch pans, nine bulbs of one variety in each:
1st, William Whitman, $6.

NARCISSUSES.— Collection of Large Trumpet varieties, six eight-inch pans, one distinct variety in each:
1st, William Whitman, $15; 2d, William Whitman, $12.

Collection of Short Trumpet varieties, six eight-inch pans, one distinct variety in each:
1st, William Whitman, $15; 2d, Mrs. J. L. Gardner, $12.

GENERAL DISPLAY OF SPRING BULBOUS PLANTS.— All classes, to be arranged with foliage plants:
1st, William Whitman, Silver Medal and $25; 2d, William Whitman, $20.

Forced Bulbs (For amateurs only).— Six pans six inches in diameter, grown without the aid of a frame or greenhouse:

1st, Miss M. A. Rand, $5; 2d, Miss M. A. Rand, $4; 3d, H. L. Rand, $3.

Orchids.— Specimen plant:

1st, Dr. C. G. Weld, $6; 2d, J. T. Butterworth, $4.

Roses.— Vase of twenty-five blooms of any red variety, arranged for effect:

2d, Montrose Greenhouses, Richmond, Bronze Medal.

Gratuities:—

William Whitman, display of *Primula obconica* and *P. kewensis*, $5.
Mrs. Frederick Ayer, *Acacia heterophylla*, two plants, $6.
Mrs. J. L. Gardner, collection of Cinerarias, $6.
A. W. Preston, display of spring flowering plants, $20.
Mrs. Frederick Ayer, display of hard-wooded plants, $15.
William Sim, display of Sweet Peas and Violets, $10.
Mrs. E. M. Gill, display, $3.

National Flower Show.

March 25 to April 1.

W. A. Manda, display of tropical plants, Gold Medal.
Thomas Roland, group of Acacias and other plants, Gold Medal.
R. & J. Farquhar & Co., Dutch garden, Gold Medal.
C. B. Newbold, *Azalea indica alba* and *A. indica* Iveranna, Silver Medal.
C. S. Sargent, collection of hybrid Imantophyllums, Silver Medal.
M. H. Walsh, collection of Rambler Roses, Silver Medal.
Mrs. Frederick Ayer, collection of Acacias and Heaths, Silver Medal.
Thomas Roland, Rose garden, Silver Medal.
Sidney Hoffman, Formal garden, Silver Medal.
C. S. Sargent, specimen Imantophyllum, First Class Certificate of Merit.

May Exhibition.

May 20 and 21.

Calceolarias.— Six varieties in pots:

1st, E. A. Clark, $15.

Pelargoniums.— Six named Show or Fancy varieties, in not less than eight-inch pots, in bloom:

1st, William Whitman, $10; 2d, Mrs. J. L. Gardner, $6; 3d, William Whitman, $4.

Six named Zonale varieties, in bloom:

1st, Winthrop Ames, $8.

Gratuities:—

E. A. Clark, Calceolarias, four plants, $2.
William Whitman, display of Zonale and Fancy Pelargoniums, $5.
Dr. C. G. Weld, *Hydrangea hortensis*, six plants, $5.
Mrs. J. L. Gardner, display of Orchids, $15.
George Page, specimen orchid, *Oncidium sphacelatum*, $3.
Blue Hill Nurseries, collection of Lilacs, $5.
George Page, *Iris Florentina* and cut Lilacs, $3.
E. A. Clark, vase of American Beauty Roses, $2.
Dr. C. G. Weld, vase of Darwin Tulips, $1.
Mrs. E. M. Gill, display of annuals and other flowers, $4.

Rhododendron Exhibition.

June 10 and 11.

Orchids.— Display of twenty-five plants, in not less than four genera, arranged for effect with foliage plants, in a space eight feet by five feet:

1st, J. T. Butterworth, $25; 2d, Mrs. J. L. Gardner, $15; 3d, J. T. Butterworth, $10.

Gratuities:—

Mrs. J. L. Gardner, display of Rhododendrons, $3.
T. C. Thurlow's Sons Co., display of Peonies, $10.
William Whitman, collection of Peonies, $8.
Mrs. J. L. Gardner, " " " $8.
J. T. Butterworth, display of Orchids, $3.
Harvard Botanic Garden, display of Water Lilies, $10.
William Whitman, display of Palms and Canterbury Bells, $3.
Mrs. E. M. Gill, display of cut flowers, $5.

Rose, Peony, and Strawberry Exhibition.

June 24 and 25.

Theodore Lyman Fund.

Hardy Roses.— Collection, named, not less than twenty varieties filling fifty vases, one rose in each vase:
1st, Miss S. B. Fay, $20.

John C. Chaffin Fund.

Best three blooms of any white Hybrid Perpetual Rose:
1st, Robert Seaver, Frau Karl Druschki, $5.
Best three blooms of any pink Hybrid Perpetual Rose:
1st, Robert Seaver, Mrs. John Laing, $5; 2d, Robert Seaver, Mrs. R. G. Sharman-Crawford, $3.
Best three blooms of any red Hybrid Perpetual Rose:
1st, Robert Seaver, Ulrich Brunner, $5; 2d, Robert Seaver, Gen. Jacqueminot, $3.
Best three blooms of any new Hybrid Perpetual Rose not offered in any American catalogue previous to 1900:
Robert Seaver, Frau Karl Druschki, $10.

Society's Prizes.

Hybrid Perpetual, twelve named varieties, three of each:
1st, Miss S. B. Fay, $12.
Six named varieties, three of each:
1st, Miss S. B. Fay, $6; 2d, W. J. Clemson, $4.
Six named varieties, one of each:
1st, Miss S. B. Fay, $3.
Best collection of Hybrid Tea Roses, not less than twelve varieties, three blooms each:
1st, Miss S. B. Fay, $15.
Best three blooms of a variety introduced since 1905:
1st, Robert Seaver, J. B. Clark, $3.
Six blooms of Frau Karl Druschki:
1st, Miss S. B. Fay, $3; 2d, W. J. Clemson, $2.

Six blooms of Mrs. R. G. Sharman-Crawford:
1st, Miss S. B. Fay, $3; 2d, W. J. Clemson, $2.
Six blooms of Margaret Dickson:
1st, Miss S. B. Fay, $3.
Six blooms of Ben Cant:
1st, Miss S. B. Fay, $3.
Six blooms of any other variety:
1st, Miss S. B. Fay, $3; 2d, J. T. Butterworth, $2.
General display, one hundred bottles of Hardy Roses, named, in the Society's racks:
1st, Miss S. B. Fay, $15.

Sweet Williams.— Display, eighteen vases, not less than six varieties:
1st, William Whitman, $3; 2d, George Page, $2; 3d, William Whitman, $1.

Herbaceous Peonies.— Collection of twenty or more named varieties, double, one flower of each:
1st, T. C. Thurlow's Sons Co., $12.
Collection of twelve named varieties, double, three flowers of each:
1st, T. C. Thurlow's Sons Co., $12.
Specimen bloom, double:
1st, William Whitman, $2; 2d, T. C. Thurlow's Sons Co., $1.
Collection of six named varieties, double, white, one flower of each:
1st, T. C. Thurlow's Sons Co., $3.
Vase of twenty-five blooms, double, pink or rose:
1st, T. C. Thurlow's Sons Co., Grandiflora, $5.
Vase of twenty-five blooms, double, red or crimson:
1st, T. C. Thurlow's Sons Co., Marechal Vaillant, $5.

Campanula Medium.— Collection, not less than fifteen bottles:
1st, William Whitman, $4; 2d, George Page, $3.

Delphiniums.— Display, twelve spikes, in twelve different varieties, named:
1st, William Whitman, $8.

Gratuities: —

W. J. Clemson, display of Hybrid Roses, $5.
Mrs. E. M. Gill, display of Roses and other flowers, $8.
Miss Cornelia Warren, three plants in bloom of *Oncidium flexuosum*, $3.
William Whitman, display of herbaceous flowers, $8.

July 1.

Gratuity: —

William Whitman, display of seedling Delphiniums and Japanese Iris, $15.

Sweet Pea Exhibition.

July 15 and 16.

Sweet Peas.— Display of thirty distinct named varieties, filling thirty vases, twelve sprays of one variety in each vase:
1st, W. J. Clemson, $8.
Best twelve varieties, named, six sprays of each:
1st, Frederick Mason, $3.
Fifty sprays, any named white variety:
1st, Frederick Mason, $3; 2d, W. J. Clemson, $2.
Fifty sprays, light pink or blush:
1st, W. J. Clemson, $3.
Fifty sprays, rose colored:
1st, W. J. Clemson, $3.
Fifty sprays, blue or purple:
1st, W. J. Clemson, $3.
Fifty sprays, lavender:
1st, W. J. Clemson, $3; 2d, Frederick Mason, $2.
Fifty sprays, red or crimson:
1st, W. J. Clemson, $3.
Fifty sprays, orange or salmon:
1st, W. J. Clemson, $3; 2d, W. J. Clemson, $2; 3d, Frederick Mason, $1.
Fifty sprays, any other color:
1st, W. J. Clemson, $3.

Gratuities: —

Frederick Mason, collection of Sweet Peas, $6.
Mrs. E. M. Gill, display of cut flowers, $5.

August 19 and 20.

Perennial Phloxes.— Twelve named varieties, one truss of each:
1st, T. C. Thurlow's Sons Co., $8; 2d, William Whitman, $6.
General display, in not less than thirty vases, named:
1st, T. C. Thurlow's Sons Co., $6; 2d, F. J. Rea, $5; 3d, J. K. Alexander, $3.

Gladioli.— Twelve named varieties, one spike of each:
1st, Montague Chamberlain, $5; 2d, Montague Chamberlain, $3; 3d, J. K. Alexander, $2.
Display of named and unnamed varieties filling one hundred vases, arranged for effect with any foliage:
1st, Montague Chamberlain, $8; 2d, J. K. Alexander, $6.
China Asters.— Display of large flowered of all classes, named, not less than fifty vases, three flowers, in each:
1st, William Whitman, $6.
Annuals.— General display, named, not less than thirty species, filling not less than one hundred vases:
1st, Mrs. J. L. Gardner, $10.

Gratuities: —

William Whitman, display of Herbaceous Phloxes, $5.
W. P. Lothrop, display of cut Dahlias, $3.
William Whitman, display of annuals and perennials, $8.
George Page, display of foliage plants, $8.
Mrs. E. M. Gill, display of cut flowers, $4.

General Autumn Exhibition.

September 8, 9, and 10.

Dahlias.— Show, twenty-four blooms, named varieties:
1st, W. D. Hathaway, $4; 2d, J. K. Alexander, $3.
Show, twelve blooms, named varieties:
1st, W. P. Lothrop, $3; 2d, Mrs. L. A. Towle, $2; 3d, Mrs. L. M. Towle, $1.
Fancy, twenty-four blooms, named varieties:
1st, W. D. Hathaway, $4.
Fancy, twelve blooms, named varieties:
1st, W. P. Lothrop, $3; 2d, Mrs. L. A. Towle, $2; 3d, J. K. Alexander, $1.
Cactus, twenty-four blooms, named varieties:
1st, J. K. Alexander, $4.
Cactus, twelve blooms, named varieties:
1st, W. P. Lothrop, $3; 2d, W. D. Hathaway, $2; 3d, Forbes & Keith, $1.
Decorative, twenty-four blooms, named varieties:
1st, W. D. Hathaway, $4.

Decorative, twelve blooms, named varieties:
1st, W. P. Lothrop, $3; 2d, J. K. Alexander, $2; 3d, Forbes & Keith, $1.
Peony-flowered, twelve blooms, named varieties:
1st, Forbes & Keith, $3.
Pompon, twenty-four vases of three blooms each, named varieties:
1st, J. K. Alexander, $4.
Pompon, twelve vases of three blooms each, named varieties:
1st, Mrs. L. A. Towle, $3; 2d, W. P. Lothrop, $2.
Single, twelve vases of three blooms each, named varieties:
1st, J. K. Alexander, $3.
Largest and best collection of named varieties, one vase of each:
1st, Mrs. L. M. Towle, $8.

Gratuities: —

J. K. Alexander, display of Dahlias, $20.
W. D. Hathaway, " " " $5.
Mrs. L. A. Towle, " " " $5.
G. B. Gill, " " " $3.
Mrs. L. A. Towle, vase of Asters, $1.
R. N. Lister, *Celosia magnifica*, $2.
William Whitman, display of cut flowers, $15.
Mrs. Frederick Ayer, collection of Crotons and Ferns, $15.
Mrs. E. M. Gill, general display, $5.

Chrysanthemum Show.

November 9, 10, 11, and 12.

Flowering and Foliage Plants.— Best arranged group covering three hundred square feet:
1st, Edward MacMulkin, $50; 2d, W. W. Edgar, $35.
Orchids.— Best table of Orchids, both plants and flowers, six or more genera, accurately named:
1st, Wheeler & Co., $50; 2d, Paul de Nave, $40; 3d, J. T. Butterworth, $30.
Chrysanthemums.— Four specimen plants, any color or class:
1st, T. E. Proctor, $60.
Twenty-five plants, commercial specimens, in not less than six varieties, in not over eight-inch pots:
1st, W. H. Elliott, $30; 2d, W. H. Elliott, $20.
Twelve plants, single-flowering sorts, not less than three varieties:
1st, H. E. Converse, $15.

Six plants, of six different varieties, grown to six stems with one bloom to each stem, in seven-inch pots:
1st, Mrs. Lester Leland, $10; 2d, Mrs. Lester Leland, $8.
Best Chrysanthemum plant on exhibition:
T. E. Proctor, Silver Medal.
Kentia.— Two plants eight feet high or over:
1st, William Whitman, $15; 2d, Mrs. Frederick Ayer, $12.
Areca.— Two tubs, one or more plants in a tub, eight feet or over in height:
1st, Mrs. Frederick Ayer, $15; 2d, William Whitman, $12.

Henry A. Gane Memorial Fund.

Chrysanthemums.— For the best vase of blooms of the Mrs. Jerome Jones or the Yellow Mrs. Jerome Jones:
1st, James Nicol, Mrs. Jerome Jones, $20; 2d, James Nicol, Yellow Mrs. Jerome Jones, $10.

Society's Prizes.

Twelve blooms, Japanese Incurved, named:
1st, H. E. Converse, $8.
Twelve blooms, Reflexed, named:
1st, H. E. Converse, $8.
Twelve sprays or branches of Pompon, distinct varieties:
1st, E. K. Butler, $5; 2d, P. B. Robb, $3; 3d, P. B. Robb, $2.
Vase of ten blooms on long stems, Pink, named:
1st, James Nicol, $10; 2d, E. A. Clark, Wm. Duckham, $8.
Vase of ten blooms on long stems, Red, named:
1st, E. A. Clark, Morrison, $10.
Vase of ten blooms on long stems, White, named:
1st, E. A. Clark, Beatrice May, $10.
Vase of ten blooms on long stems, Yellow, named:
1st, E. A. Clark, Mrs. Wm. Duckham, $10; 2d, E. A. Clark, Col. D. Appleton, $8.
Vase of ten blooms on long stems, any other color, named:
1st, E. A. Clark, Rose Pockett, $10.
Twelve vases, Singles, twelve distinct varieties, six cut sprays each, not disbudded:
1st, George Page, $10; 2d, W. A. Riggs, $6; 3d, H. E. Converse, $4.
Best decoration of Chrysanthemums for table of ten covers:
1st, Edward MacMulkin, $40; 2d, Sidney Hoffman, $30; 3d, Mrs. E. M. Gill, $20.
Best vase of seventy-five Chrysanthemum blooms in the Society's large China vases:
1st, E. A. Clark, $40; 2d, W. W. Edgar Co., $30; 3d, W. W. Edgar Co., $20.

Gratuities: —

Thomas Roland, display of flowering and foliage plants, $25.
Mrs. Frederick Ayer, six Decorative Palms, $8.
W. A. Riggs, vase of Chrysanthemum Major Bonaffon, $15.
William Whitman, display of Palms and Chrysanthemums, $10.
Mrs. E. M. Gill, display of cut Chrysanthemums, $8.
Mrs. Frederick Ayer, six vases of cut single Chrysanthemums, $3.
Strout & Co., collection of Carnations, $10.
A. A. Pembroke, five vases of Carnations, $5.
Mrs. Francis Peabody, specimen plants of Begonia Gloire de Lorraine, $5.
W. I. Walke, artistic display of Begonia Gloire de Lorraine, $20.
James Wheeler, three vases of Antirrhinums, $3.
W. W. Edgar Co., display of Cyclamen and Begonia Gloire de Lorraine, $12.
Mrs. Frederick Ayer, Variegated Pineapple, $1.

Additional Awards.

GOLD MEDAL.

June 10. E. J. Shaylor, collection of Peonies.

SILVER MEDALS.

January 7. Weld Garden, superior culture of Calanthes.
" " E. B. Dane, *Cypripedium* × *Merlin magnificum.*
" 21. Walter Hunnewell, seedling *Laelio-Cattleya Clancyana* (*L. elegans* × *C. Minucia*).
February 24. W. P. Harvey, *Cymbidium Tracyanum.*
March 4. John McFarland, unnamed seedling orchid (*Cattleya Dowiana* × *C. Lawrenceana*).
May 20. A. W. Preston, specimen *Hydrangea hortensis.*
June 10. R. & J. Farquhar & Co., display of Peonies, Irises, and other plants.
" " Walter Hunnewell, *Laelio-Cattleya Wellesleyana* (*L. elegans* × *C. Reineckiana*).
July 15. R. & J. Farquhar & Co., *Lilium myriophyllum.*
" 22. " " " " " *Farquhari.*
August 12. Walter Hunnewell, seedling Orchid (*Cattleya Warneri* × *C. gigas*, var. Waban).
" 19. Montague Chamberlain, Gladiolus Rajah.
" " R. & J. Farquhar & Co., display of *Lilium leucanthemum.*
September 8. B. H. Tracy, display of Gladioli.

October 7. John McFarland, hybrid Cattleya (*C. Lawrenceana* × *C. Dowiana*).
November 9. James Nicol, vase of Chrysanthemum Mrs. Jerome Jones.
" " E. S. Webster, Winter-flowering Begonias, Elatior and Winter Cheer.

Bronze Medals.

June 10. J. T. Butterworth, specimen *Miltonia vexillaria.*
November 9. William Sim, display of Pansies.

First Class Certificates of Merit.

January 7. Weld Garden, *Cymbidium* × *Holfordianum* (*C. eburneum* × *C. grandiflorum*).
" " E. B. Dane, *Cypripedium insigne Sanderae* × *C. Leeanum*).
" " " " " " " *nobile nigrum.*
February 4. E. B. Dane, *Cypripedium Olivia* (*C. tonsum* × *C. niveum*).
" " " " " " *Minos Youngii* (*C. Arthurianum pulchellum* × *C. Spicerianum*).
" 24. E. B. Dane, *Cypripedium Maudiae* var. *magnificum.*
" " " " " " Venus (*C. insigne Sanderae* × *C. niveum*).
May 20. Dr. C. G. Weld, hybrid Laelio-Cattleya (*L.-C. Hyeana* × *L.-C. Canhamiana rubra*).
June 10. F. J. Rea, new *Aster Amellus*, Beauté Parfaite.
" " Langwater Gardens, seedling Orchids (*Cattleya Loddigesii* × *Laelia purpurata alba*).
July 15. R. &. J. Farquhar & Co., *Lathyrus latifolius* White Pearl.
August 19. Montague Chamberlain, Gladiolus Niagara.
" " George Page, Gladiolus Kimderdi Glory.
" " R. & J. Farquhar & Co., *Viola cornuta purpurea.*
" " W. P. Lothrop, seedling decorative Dahlia, Lothrop's Seedling.
September 8. Walter Hunnewell, *Laelio-Cattleya Gottoiana* var. *Wellesleyensis.*
" " J. H. Flint, seedling Decorative Dahlia Dorothy Flint.
" " Forbes & Keith, seedling Cactus Dahlia Denison.
November 9. George Melvin, seedling *Solanum capsicastrum Melvinii.*
" " S. J. Reuter & Son, improved double White Killarney Rose.
" " A. N. Pierson, Rose Killarney Queen.
" " " " " double White Killarney Rose.
" " E. H. Wetterlow, seedling Begonia (*B. incarnata* × Tuberous variety).

November 9 Duncan Finlayson, *Cattleya bicolor* × *C. labiata.*
" " C. H. Totty, new Rose Sunburst.
" " T. E. Proctor, Chrysanthemum Emmy Lou.

Cultural Certificates.

February 24. George Page, specimen plant of *Erica melanthera.*
May 20. Miss Cornelia Warren (H. Stuart, gardener), superior cultivation of *Cattleya citrina.*
June 10. J. T. Butterworth, specimen *Cattleya Mendelii Morganiana.*

Honorable Mention.

February 24. E. B. Dane, display of Cypripediums.
" " W. A. Manda, collection of cut Orchids.
" " R. & J. Farquhar & Co., *Clematis montana rubens.*
" " " " " " *Cerasus Wilsoni.*
May 20. " " " " display of many flowering Tulips, Lilies, and other flowering bulbs.
" " R. & J. Farquhar & Co., *Lilium myriophyllum.*
June 10. Wilton Lockwood, new hybrid Peony L'Espérance.
" " R. & J. Farquhar & Co., display of Tree Peonies.
" " " " " " *Iris pallida.*
" 24. J. T. Butterworth, three hybrid Orchids.
" " R. & J. Farquhar & Co., hybrid Digitalis.
" " " " " " collection of Peonies.
" " E. J. Shaylor, collection of Peonies.
" " " " " Peony Tourngalle.
July 1. Mrs. N. E. Dolbear, seedling Roses (Crimson Rambler × *R. Wichuraiana*).
" 15. Dr. Harris Kennedy, display of Japanese Iris.
" " " " " *Iris Kaempferi.*
" " R. & J. Farquhar & Co., display of Japanese Iris.
" " " " " " display of new unnamed Lilies.
" 22. " " " " *Lilium longiflorum*, variety from Korea.
August 19. " " " collection of unnamed Lilies from China.
" " " " " display of herbaceous flowers and Phloxes.
September 8. Mrs. Frederick Ayer, specimen of *Cibotium Scheidii.*
" " R. & J. Farquhar & Co., display of Lilies.
" " G. B. Gill, seedling Cactus Dahlia Mrs. E. M. Gill.
" " J. H. Flint, seedling Decorative Dahlia Hetta.
" " B. H. Tracy, *Gladiolus primulinus.*
November 9. Strout & Co., seedling Carnation (Beacon × Victory).
" " E. S. Webster, *Celosia Thompsoni pyramidalis.*
" " H. H. Barrows & Son, *Nephrolepis Whitmani* var. *compacta.*

Vote of Thanks.

May 20.	Arnold Arboretum, display of flowering shrubs.
June 10.	Walter Hunnewell, display of Rhododendrons.
" "	Mrs. D. S. Greenough, collection of hybrid Columbines.
" 24.	R. &. J. Farquhar & Co., collection of herbaceous flowers.
" "	Langwater Gardens, vase of *Trachelium caeruleum.*
" "	T. C. Thurlow's Sons Co., two vases of Iris.

T. D. Hatfield
Joseph Clark
Arthur H. Fewkes
Peter Fisher
Thomas Roland
William C. Rust

Committee on Plants and Flowers.

EXHIBIT OF HOTHOUSE FRUIT BY THOMAS E. PROCTOR

REPORT OF THE COMMITTEE ON FRUITS FOR THE YEAR 1911.

By Edward B. Wilder, Chairman.

The severe drought of the spring and summer, following the drought of three preceding years, has had a very injurious effect upon the earlier fruit of the season, but the frequent rains of the autumn, assisted greatly to perfect the fall and winter fruit.

The great increase of fruit exhibited at the Midwinter Flower Show, February 24–26, was very gratifying to your committee, there being twenty-seven plates of winter apples and fourteen of winter pears, a total of forty-one plates.

Elliott & H. Ward Moore of Worcester displayed a very fine collection of winter apples and Dr. W. G. Kendall of Atlantic a magnificent plate of Bosc pears, also fine Dana's Hovey.

The Strawberry Exhibition, June 24–25, was the poorest for years, owing to the dry weather; old growers never have seen so dry a spring.

Special mention should be made of a fine basket of the Black Beauty strawberry, exhibited by Samuel H. Warren of Weston.

Speaking of this berry he says, "It is a good reliable variety, good form, good yield, medium to late, and very hardy." It seemed to be one of the most promising varieties at the show.

At the Sweet Pea Exhibition, July 15–16, George V. Fletcher of Belmont displayed a good collection of twelve plates of midsummer fruit, including a very fine plate of Black Tartarian cherries.

Mrs. R. Goodnough of West Roxbury also had an excellent plate of Black Eagle cherries. These plates of cherries surpassed anything of this class shown in the Hall for years.

The early Autumn Show occurring August 19–20 was of more than the average excellence.

Elliott & H. Ward Moore had some fine Yellow Transparent

apples; Dr. W. G. Kendall of Atlantic and H. G. Spring of Ashland, magnificent Carman peaches; George V. Fletcher and H. A. Clark of Belmont, fine Bradshaw plums; and James Garthly of Fairhaven, melons.

The General Autumn Exhibition, September 8–10, was necessarily placed early in the season to make way for the great Vegetable Show and while it was too early for much of the fall fruit still there was an excellent exhibit of apples, peaches, and other fruit.

One of the chief objects of interest was the collection of peaches grown by J. Corey & Son of Truro, Massachusetts, which took first prize. The exhibit of the Messrs. Corey called forth much favorable comment from the Press, showing as it did how a live man can grow peaches, even on the sands of Cape Cod.

Your committee was gratified to have three entries for the collection of seasonable fruit arranged for effect, the best exhibit in this class for years.

F. W. Dahl of Roxbury received first prize for a very tasteful arrangement of fruit and foliage. We hope there will be an increasing interest in the collections of fruit and foliage, where there are great possibilities for display of skill in arrangement for decorative effect.

The first prize for Porter apples was awarded to Fred H. Bartlett of Plymouth, who had a plate of remarkable size and perfection.

Thomas E. Proctor of Topsfield (James Marlborough, gardener) filled a large table in the Main Hall with a splendid collection of hothouse fruits, including fourteen varieties of grapes, three of peaches, also pears and persimmons. The pear, apple, and plum trees, grown in tubs and in full fruit drew forth many favorable comments from the public. The very fine culture displayed, also the perfection of the specimens, as well as the arrangement of the table with maiden hair fern were considered by the committee worthy of the Society's highest award, a Gold Medal.

The melons at the Vegetable Show, September 21–24, included eight entries for Orange- or Salmon-fleshed, four for Green-fleshed, and three for Watermelon. James Garthly of Fairhaven won first prize in the Salmon-fleshed class with Honey Drop, and first prize in Green-fleshed with his new melon Mrs. H. H. Rogers.

Frederick Mason (Edwin L. Lewis, Manager) won first prize in the Watermelon class with the variety called Tom Watson.

David Lumsden of the New Hampshire Agricultural College, Durham, New Hampshire, was awarded a First Class Cultural Certificate for a new seedling Orange-fleshed melon, grown by himself, which has large promise of merit.

Honorable Mention was given the new Chinese raspberry *Rubus inominatus,* exhibited for the first time by Bayard Thayer of South Lancaster.

The exhibition of fruit at the Chrysanthemum Show in November took the place to some extent of the regular Autumn Fruit Show which gave way for the Special Vegetable Exhibition in September.

The competition for regular prizes was not large, but some good fruit was displayed. Lyman F. Priest of Gleasondale won the first prize for the best collection of apples arranged for decorative effect, having an artistic grouping of fine apples and foliage.

The first prize for the collection of native and foreign fruit arranged for effect was awarded Edward MacMulkin of Boston for a large table of beautiful and varied fruits. Special mention should be made of the large collection of apples consisting of ninety-four distinct named varieties which were donated through the courtesy of the New England Fruit Show.

With this addition to its other exhibits the committee filled the small hall with fruit, an unusual circumstance for the season of the year.

In this wonderful collection were the finest specimens of apples grown in New England, giving a good opportunity for the study of the different varieties and comparative values for home and market use of this fruit which is becoming so universally in demand.

Considering the unfavorable season your committee feels that good progress has been made in this department of the great work carried on by the Society.

PRIZES AND GRATUITIES AWARDED FOR FRUITS.
1911.

Midwinter Flower Show.

February 24, 25, and 26.

Apples.— For the best collection of Winter Apples, not less than four varieties, twelve specimens of each:
1st, E. & H. W. Moore, $5; 2d, G. V. Fletcher, $4; 3d, H. A. Clark, $3.
Pears.— For the best two plates of Winter Pears, distinct varieties, twelve specimens of each:
1st, W. G. Kendall, $4; 2d, G. V. Fletcher, $3; 3d, F. W. Dahl, $2.

Gratuity: —

L. F. Priest, Roxbury Russet Apples, $2.

Rose, Peony, and Strawberry Exhibition.

June 24 and 25.

Theodore Lyman Fund.

Strawberries.— Four quarts of any variety:
1st, S. H. Warren, Black Beauty, $8; 2d, G. V. Fletcher, Marshall, $6; 3d, E. & H. W. Moore, Downing Bride, $4.

Benjamin H. Pierce Fund.

Two quarts of any variety introduced since 1907:
1st, Wilfrid Wheeler, Heritage, $4.

Society's Prizes.

For the best collection of fifteen baskets of two quarts each, and not less than six varieties:
1st, Wilfrid Wheeler, $20.
Six baskets of one quart each, and of six varieties:
1st, E. & H. W. Moore, $6.
Five baskets of two quarts each, of one variety:
1st, Wilfrid Wheeler, $8.

THE MELON APPLE. EXHIBIT OF THOMAS E. PROCTOR

For the most tastefully arranged centerpiece of strawberries and foliage for a dinner table:
1st, Wilfrid Wheeler, $8.
Two quarts of Abington:
1st, Wilfrid Wheeler, $2.
Two quarts of Barrymore:
1st, G. V. Fletcher, $2; 2d, E. &. H. W. Moore, $1.
Two quarts of Brandywine:
1st, E. & H. W. Moore, $2.
Two quarts of Glen Mary:
1st, Wilfrid Wheeler, $2.
Two quarts of Golden Gate:
1st, E. & H. W. Moore, $2.
Two quarts of Marshall:
1st, G. V. Fletcher, $2.
Two quarts of Minute Man:
1st, Wilfrid Wheeler, $2.
Two quarts of Parsons Beauty:
1st, Wilfrid Wheeler, $2.
Two quarts of Sample:
1st, E. & H. W. Moore, $2; 2d, Wilfrid Wheeler, $1.
Two quarts of Senator Dunlap:
1st, E. & H. W. Moore, $2.
Two quarts of Stevens Late Champion:
1st, Wilfrid Wheeler, $2.
Two quarts of any other variety:
1st, E. & H. W. Moore, $3.
Cherries.— Two quarts of any Red variety:
1st, C. B. Travis, Elton, $2; 2d, J. H. Fletcher, Queen Ann, $1.
Two quarts of any Black variety:
1st, G. V. Fletcher, Black Tartarian, $2; 2d, C. B. Travis, Black Eagle, $1.

Gratuity: —

W. C. Winter, Alexander Peach, $2.

Sweet Pea Exhibition.

July 15 and 16.

Raspberries.— Two quarts of Cuthbert:
1st, Wilfrid Wheeler, $2; 2d, P. Andersen, $1.
Two quarts of any other variety, Red:
1st, Mrs. R. Goodnough, Columbian, $2.

Two quarts of any variety, Black:
1st, Wilfrid Wheeler, Black Cap, $2.

Currants.— Two quarts of any Red variety:
1st, William Whitman, Fay's Prolific, $3; 2d, W. G. Kendall, Wilder, $2.

Two quarts of any White variety:
1st, W. G. Kendall, White Grape, $3; 2d, William Whitman, White Grape, $2.

Collection of six baskets, one quart each, not less than three varieties, White, Red, and Black, admissible:
1st, William Whitman, $5.

Gooseberries.— Two quarts of Chautauqua:
1st, W. J. Clemson, $2.

Two quarts of Industry:
1st, W. J. Clemson, $2.

Two quarts of any other variety:
1st, P. Andersen, Worden, $2; 2d, W. G. Kendall, Bates, $1.

Fruit.— Largest and best collection of midsummer fruits arranged for effect with their own foliage:
1st, G. V. Fletcher, $8.

Gratuities: —

Mrs. R. Goodnough, Black Eagle Cherry, $2.
Mrs. A. A. Warburton, Black Currants, $1.
W. C. Winter, Hale Early Peach, $1.
G. V. Fletcher, Black Tartarian Cherry, Honorable Mention.

August 19 and 20.

Apples.— Chenango:
1st, Edward Parker, $3; 2d, E. E. Cole, $2; 3d, J. Corey & Son, $1.

Duchess of Oldenburg:
1st, H. A. Clark, $3; 3d, J. Corey & Son, $1.

Sweet Bough:
1st, G. V. Fletcher, $3; 2d, C. B. Travis, $2; 3d, E. & H. W. Moore, $1.

Williams:
1st, G. V. Fletcher, $3; 2d, H. A. Clark, $2; 3d, E. & H. W. Moore, $1.

Any other variety:
1st, E. & H. W. Moore, Yellow Transparent, $3; 2d, J. Corey & Son, Yellow Transparent, $2; 3d, Michael Cahalan, Red Astrachan, $1.

Melons.— Four specimens:
1st, James Garthly, Mrs. H. H. Rogers, $3; 2d, James Garthly, Honey Drop, $2; 3d, G. D. Moore, Honey Dew, $1.

PEARS.— Clapp's Favorite:
1st, F. W. Dahl, $3; 2d, W. G. Kendall, $2; 3d, Frederick Mason, $1.
Any other variety:
1st, F. W. Dahl, Dearborn Seedling, $3; 2d, E. B. Wilder, Brandywine, $2.

PEACHES.— For the largest and best collection, not less than three varieties, twelve specimens of each:
1st, J. Corey & Son, $6.
Greensboro:
1st, Wilfrid Wheeler, $3; 2d, J. S. Chase, $2.
Any other variety:
1st, W. G. Kendall, Carman, $3; 2d, H. G. Spring, Carman, $2; 3d, H. A. Clark, Carman, $1.

PLUMS, JAPANESE.— Abundance:
1st, Frederick Parker, $2; 2d, W. G. Kendall, $1.
Burbank:
1st, W. G. Kendall, $3; 2d, J. Corey & Son, $2; 3d, Frederick Mason, $1.
Any other variety:
1st, G. V. Fletcher, Bradshaw, $3; 2d, H. A. Clark, Bradshaw, $2; 3d, G. V. Fletcher, McLaughlin, $1.

GENERAL AUTUMN EXHIBITION.

SEPTEMBER 8, 9, AND 10.

Theodore Lyman Fund.

APPLES.— For the best collection of six varieties of Fall Apples, specimens to be ripe, twelve of each:
1st, Turner Hill Farm, $12; 2d, L. F. Priest, $10; 3d, E E. Cole, $8.

Benjamin H. Pierce Fund.

APPLES.— Gravenstein:
1st, E. E. Cole, $3; 2d, L. F. Priest, $2; 3d, E. & H. W. Moore, $1.

Marshall P. Wilder Fund.

PEARS.— Bartlett:
1st, F. W. Dahl, $3; 2d, E. B. Wilder, $2; 3d, Elbridge Torrey, $1.
Clapp's Favorite:
1st, F. W. Dahl, $3; 2d, Charles Scully, $2; 3d, G. V. Fletcher, $1.

Society's Prizes.

Apples.— McIntosh:

1st, L. F. Priest, $3; 2d, J. Corey & Son, $2; 3d, Turner Hill Farm, $1.

Porter:

1st, F. H. Bartlett, $3; 2d, Wilfrid Wheeler, $2; 3d, Turner Hill Farm, $1.

Any other variety, Gravenstein excepted:

1st, L. F. Priest, Wealthy, $4; 2d, Hittinger Fruit Co., Washington Strawberry, $3; 3d, Turner Hill Farm, Wealthy, $2; 4th, J. H. Fletcher, Maiden Blush, $1.

Melons.— Sweet:

1st, James Garthly, Mrs. H. H. Rogers, $3; 2d, James Garthly, Honey Drop, $2; 3d, J. S. Bache, Triumph, $1.

Pears.— Any variety, ripe, Bartlett and Clapp's Favorite excepted:

1st, W. G. Kendall, Souvenir du Congrès, $4; 2d, E. B. Wilder, Harris, $3; 3d, E. B. Wilder, President, $2; 4th, G. V. Fletcher, Boussock, $1.

Peaches.— Collection of not less than four varieties:

1st, J. Corey & Son, $8; 2d, H. A. Clark, $4; 3d, G. V. Fletcher, $2.

Carman:

1st, W. G. Kendall, $2.

Champion:

1st, W. G. Kendall, $2; 2d, G. V. Fletcher, $1.

Elberta:

1st, Hittinger Fruit Co., $3.

Any other variety:

1st, W. G. Kendall, Mountain Rose, $3; 2d, A. F. Estabrook, Mountain Rose, $2; 3d, Hittinger Fruit Co., Globe, $1.

Plums.— Collection of not less than four varieties, twelve specimens of each:

1st, E. & H. W. Moore, $5; 2d, G. V. Fletcher, $3; 3d, W. T. Hutchinson, $2.

Single plate of any variety:

1st, E. & H. W. Moore, Bradshaw, $3; 2d, G. V. Fletcher, Bradshaw, $2; 3d, E. & H. W. Moore, Pond's Seedling, $1.

Japanese Plums.— Collection of not less than four varieties, twelve specimens of each:

1st, E. & H. W. Moore, $5.

Single plate of any variety:

1st, W. T. Hutchinson, Wickson, $3; 2d, Mrs. A. A. Warburton, $2; 3d, E. & H. W. Moore, $1.

Native Grapes.— For the best White Grape:

1st, F. W. Damon, Niagara, $3; 2d, J. Bauernfeind, Niagara, $2; 3d, E. R. Farrar, Niagara, $1.

For the best Red Grape:

1st, E. R. Farrar, Brighton, $3; 2d, J. S. Chase, Delaware, $2; 3d, George Page, Delaware, $1.

For the best Purple Grape:

1st, W. G. Kendall, Worden, $3; 2d, J. Bauernfeind, Herbert, $2; 3d, E. R. Farrar, Worden, $1.

For the best collection of five varieties, three bunches of each:

1st, E. R. Farrar, $5; 2d, W. G. Kendall, $4; 3d, J. Corey & Son, $3.

FRUIT.— For the best collection of seasonable fruit arranged for effect with foliage, not to cover a space larger than four by six feet:

1st, F. W. Dahl, $15; 2d, G. V. Fletcher, $12; 3d, Wilfrid Wheeler, $10.

Gratuities: —

L. F. Priest, Crab-apples, $1.

E. R. Farrar, collection of Grapes, $2.

T. E. Proctor, exhibition of Hothouse Fruits, Gold Medal.

SPECIAL VEGETABLE EXHIBITION.

SEPTEMBER 21, 22, 23, AND 24.

MUSKMELONS.— Green-fleshed, three specimens:

1st, James Garthly, Mrs. H. H. Rogers, $6; 2d, Frederick Mason, Honey Dew, $4; 3d, Mrs. Bolyston Beal, Montreal Nutmeg, $3.

Orange- or salmon-fleshed, three specimens:

1st, James Garthly, Honey Drop, $6; 2d, Albert Anderson, Honey Drop, $4; 3d, Oliver Ames, Honey Drop, $3.

WATERMELONS.— Any variety, two specimens:

1st, Frederick Mason, Tom Watson, $6; 2d, Frederick Mason, Kleddey Sweet, $4; 3d, Mrs. A. A. Warburton, Peerless, $3.

Gratuities: —

Mrs. M. W. Chadbourne, Elberta Peach, $1.

David Lumsden, new seedling orange-fleshed Melon, First Class Certificate of Merit.

Bayard Thayer, *Rubus inominatus*, Honorable Mention.

Chrysanthemum Show.

November 9, 10, 11, and 12.

Samuel Appleton Fund.

Apples.— Baldwin:
1st, L. F. Priest, $3; 2d, E. E. Cole, $2; 3d, E. & H. W. Moore, $1.
Hubbardston:
2d, Mrs. M. W. Chadbourne, $2.
Pears.— Bosc:
1st, G. V. Fletcher, $3; 2d, J. B. Shurtleff, Jr., $2.
Sheldon:
1st, F. W. Dahl, $3.

Benjamin V. French Fund.

Apples.— R. I. Greening:
1st, E. & H. W. Moore, $3; 2d, G. V. Fletcher, $2.

Marshall P. Wilder Fund.

Pears.— Anjou:
1st, F. W. Dahl, $3; 2d, C. B. Travis, $2; 3d, E. B. Wilder, $1.

Society's Prizes.

Apples.— For the best six varieties of Winter Apples, twelve specimens of each:
1st, L. F. Priest, $10; 2d, C. M. Parker, $8.
Bellflower:
1st, E. & H. W. Moore, $3.
Pound Sweet:
1st, G. V. Fletcher, $2.
McIntosh:
1st, L. F. Priest, $3; 2d, E. E. Cole, $2; 3d, E. & H. W. Moore, $1.
Northern Spy:
2d, C. M. Parker, $2; 3d, Mrs. H. L. Dawes, $1.
Roxbury Russet:
1st, L. F. Priest, $3; 2d, G. V. Fletcher, $2; 3d, E. & H. W. Moore, $1.
Sutton:
1st, E. & H. W. Moore, $3.
Thompkins County King:
1st, E. E. Cole, $3; 2d, E. & H. W. Moore, $2; 3d, Mrs. Lester Leland, $1.

THE DR. JULES GUYOT PEAR. EXHIBIT OF THOMAS E. PROCTOR

Tolman Sweet:
1st, E. E. Cole, $3; 2d, G. V. Fletcher, $2
Wealthy:
1st, L. F. Priest, $3.

PEARS.— For the best six varieties of Winter Pears, twelve specimens of each:
1st, F. W. Dahl, $10.
Angouleme:
1st, F. W. Dahl, $3.
Comice:
1st, J. L. Bird, $3; 2d, Mrs. M. W. Chadbourne, $2.
Dana's Hovey:
1st, W. G. Kendall, $3; 2d, F. W. Damon, $2; 3d, G. V. Fletcher, $1.
Josephine de Malines:
1st, J. B. Shurtleff, Jr., $2; 2d, J. L. Bird, $1.
Lawrence:
1st, F. W. Dahl, $3; 2d, G. V. Fletcher, $2; 3d, E. & H. W. Moore, $1.
Seckel:
1st, F. W. Dahl, $3; 2d, G. V. Fletcher, $2.
Vicar:
1st, F. W. Dahl, $3.

QUINCES.— Any variety:
1st, G. V. Fletcher, $3; 2d, E. & H. W. Moore, $2; 3d, L. F. Priest, $1.

NATIVE GRAPES.— Not girdled. For the best collection of hardy, native grapes, not less than three varieties of three bunches each:
1st, W. G. Kendall, $6; 2d, C. W. Libby, $4.

FRUIT.— Collection of native and foreign fruit, arranged for effect:
1st, Edward MacMulkin, Silver Medal and $15.

APPLES.— Collection, arranged for decorative effect:
1st, L. F. Priest, $20; 2d, C. M. Parker, $15.

Gratuities: —

L. F. Priest, Gravenstein Apples, $1.
H. L. Jackson, Bethel Apples, $1.
E. B. Wilder, Langlier Pears, $1.

EDWARD B. WILDER
WILLIAM DOWNS
WILFRID WHEELER
} *Committee on Fruits.*

REPORT OF THE COMMITTEE ON VEGETABLES FOR THE YEAR 1911.

By Duncan Finlayson, Chairman.

The Committee on Vegetables begs to report that the several exhibitions of vegetables held at Horticultural Hall during the year have been very successful in every way. The unfavorable weather conditions that prevailed in the early part of the season made it appear at one time doubtful if the growers would be able to make any kind of a display.

The great interest taken by both private and market gardeners, together with the improved methods of cultivation and irrigation of the crop were never better shown than this year, and the public generally seems to be taking more interest every year in the exhibits of vegetables. Not only do the visitors take more interest in the familiar varieties but they seem to appreciate the newer and improved kinds of salad plants; and never to our knowledge have the commercial growers had a better opportunity of improving their business than now. This suggestion applies not only to the growers but also to the seed merchants and private gardeners, and we note with pleasure the great advance made in the last few years in the growing of new and meritorious kinds of vegetables.

We believe that the raising of new and better kinds of vegetables and salad plants is only in its infancy in this country and this good work can only be carried on by the coöperation of both the seedsmen and the growers.

The earlier exhibitions of the year were fully up to the usual high standard of previous years, but the Special Exhibition of Vegetables, held September 21 to 24, in coöperation with the Boston Market Gardeners' Association, who contributed $500.00 to the premium list, was never surpassed by any exhibition of its kind in this country. There were 131 classes and every one of them was well contested. Noteworthy features of some of them are commented upon herewith.

Class 246. Collection of vegetables, twenty kinds, three prizes, $100.00, $60.00, and $40.00. This was, of course, the premium class and brought out six competitors. After a careful judging by a scale of points the first prize was awarded to Giraud Foster of Lenox (Edwin Jenkins, gardener). It was an excellent exhibit, not only in its splendid specimens, but in its skilful arrangement, and contained the following named kinds: tomatoes, Winter Beauty; mushrooms; shelled beans, Early Jersey; potatoes, Green Mountain; beets, Blood Red; asparagus, Conover's Colossal; peppers, Chinese Giant; onions, Ailsa Craig; corn, Country Gentleman; carrots, Long Orange; leeks, Prize Taker; egg plants, New York Purple; brussels sprouts, Wotton; peas, Telephone; cucumbers, English Delicacy; cauliflower, Snow Ball; artichokes, Globe; lettuce, Big Boston; celery, White Plume; and parsnips, Student.

Col. Frederick Mason of Taunton (Edwin L. Lewis, manager) was awarded second prize. This was also a fine exhibit and credit is due Mr. Lewis for the beauty and uniformity of the specimens. The following were the varieties in this collection: onions, Red Wethersfield and Giant Gibraltar; peppers, Chinese Giant; brussels sprouts, Matchless; tomatoes, Imperial and Lewis Favorite; peas, Sutton's Excelsior; beets, Edmonds and Crosby; carrots, Danvers and Long Orange; potatoes, Dew Drop and Prolific Rose; corn, Stowell's Evergreen and White Evergreen; cauliflower, Gilt Edge; celery, Golden Crosby and White Plume; egg plants, New York Improved; and parsnips, Market Model.

The third prize was given to Allen Jenkins of Lenox. This exhibit was excellent and showed much skill in arrangement. The exhibits of the other competitors were very good, especially should be mentioned that of W. J. Clemson of Taunton (J. O. Christenson, gardener).

Class 247. Collection of twelve kinds for market gardeners only, three prizes, $60.00, $40.00, and $20.00. The first was given to Waban Gardens; second to Frederick Mason; and third to J. B. Shurtleff & Son, Revere.

Class 248. Collection of vegetables, six kinds, for cottagers only, three prizes, $30.00, $20.00, and $10.00. First prize was awarded to Michael Cahalan, Taunton; second to Mrs. Alice

Warburton, also of Taunton; and third to F. W. Dahl of Roxbury.

In class 370, collection of rare and unusual kinds of vegetables, although a good prize was offered, it did not bring anything out of the ordinary. First prize was awarded to Vincent Buitta of Newton; second to Waban Gardens, and third to Oliver Ames of North Easton (Edward Parker, gardener).

In this class the Waban Gardens showed fifteen varieties of curious forms of the following named vegetables: Chinese melon; Chinese artichoke; vegetable caterpillars; vine peach; Chinese mustard; garden pomegranate; melon; red, yellow, and variegated Swiss chard; spoon gourd; roquette; borage; egg gourd; etc. These curious vegetables seemed to attract the visitors, but they are of little value for culinary purposes.

The Silver Medal offered by the Society for the best new variety of potato was not awarded owing to the inferiority of the specimens shown in comparison with the older varieties.

Lettuce and endive were exhibited in good condition, and the celery display was exceptionally fine. The following varieties of celery were of excellent quality: Giant Pascal, Paris Golden, Rose, and White Plume.

Tomatoes made a splendid showing and the quality was excellent. Beans of the leading varieties were well represented and all the classes were keenly contested. The cucumber family made a fine showing and the specimens exhibited were grown to perfection in form and size. The White Spine type was most in evidence.

Beets of several kinds were displayed and some of the round varieties were of perfect form. Onions were exhibited in many varieties and some of the best and most perfect forms were among them. Some of the kinds shown were the Ailsa Craig, Danvers Yellow, Prize Taker, and Red Wethersfield.

Potatoes were exceptionally good and several new kinds were exhibited by the Johnson Seed Potato Co. of Richmond, Maine, and also by J. E. Murphy of Canastota, New York. Both exhibits were awarded Honorable Mention.

The pumpkin and squash family was well represented and special mention should be made of Anson Wheeler of Concord for the splendid specimens he showed. Special mention should be given also of the excellent exhibits set up by Edward Parker, gardener of

Oliver Ames of North Easton. In all his exhibits we noted the uniformity and cleanliness of the specimens.

The Fottler, Fiske, and Rawson Company put up a splendid display of vegetables, not in competition, grown on their trial grounds, and we believe it would be a good thing if other seed merchants would exhibit some of their newer kinds of vegetables in this way.

Years ago the Arlington, Concord, and Revere growers used to be the leading prize takers, but now the best exhibits come from Taunton and North Easton. We hope the growers of the first mentioned towns will return again and take their places in the exhibition hall as their fathers did before them.

We congratulate the Society on the splendid exhibitions of the past year and hope it will continue to give good premiums to encourage the vegetable growers, for experience has shown us that the only way to get keen competition is by offering liberal money prizes.

PRIZES AND GRATUITIES AWARDED FOR VEGETABLES. 1911.

Midwinter Flower Show.

February 24, 25, and 26.

William J. Walker Fund.

Tomatoes.— Twelve specimens:
2d, Mrs. Frederick Ayer, $2.

Gratuity: —

F. W. Dahl, Celeriac, $1.

May 20.

Gratuity: —

E. A. Clark, Tomatoes, $2.

FIRST PRIZE COLLECTION OF VEGETABLES. EXHIBIT OF EDWIN JENKINS

Rhododendron Exhibition.

June 10 and 11.

Theodore Lyman Fund.

Asparagus.— Four bunches, twelve stalks each:
1st, G. F. Wheeler, Argenteuil, $3; 2d, Oliver Ames, Argenteuil, $2; 3d, Frederick Mason, Palmetto, $1.
Beets.— Twelve specimens, open culture:
1st, Oliver Ames, Egyptian, $3.
Lettuce — Four heads:
1st, Frederick Mason, Big Boston, $3; 2d, Frederick Mason, Wayahead, $2; 3d, Frederick Mason, Tenderheart, $1.
Rhubarb.— Twelve stalks, open culture:
1st, Frederick Mason, Victoria, $3; 2d, Oliver Ames, $2.
Spinach.— Peck:
1st, Frederick Mason, Victoria, $3.

Gratuity: —

Oliver Ames, Tomatoes, $2.

Rose, Peony, and Strawberry Exhibition.

June 24 and 25.

Beets.— Twelve, open culture:
1st, Frederick Mason, $3; 2d, W. J. Clemson, $2; 3d, D. L. Fiske, $1.
Cabbages.— Four specimens:
1st, G. D. Moore, $3; 2d, Thomas Valentine, $2; 3d, W. Heustis & Son, $1.
Carrots.— Four bunches:
1st, Frederick Mason, $3.
Cucumbers.— Four specimens:
1st, G. D. Moore, White Spine, $3.
Lettuce.— Four heads:
1st, Oliver Ames, $3; 2d, Frederick Mason, $2; 3d, W. J. Clemson, $1.
Peas.— Gradus, half-peck:
1st, D. L. Fiske, $3; 2d, Frederick Mason, $2.
Eclipse or Nott's Excelsior:
1st, Mrs. A. A. Warburton, $3; 2d, Frederick Mason, $2.

Any other variety:

1st, Mrs. A. A. Warburton, Sutton's Excelsior, $3; 2d, Frederick Mason, Sutton's Excelsior, $2; 3d, Oliver Ames, Farquhar's Prolific, $1.

Onions.— Twelve specimens.

1st, W. J. Clemson, $3; 2d, Oliver Ames, $2; 3d, Frederick Mason, $1.

Collection of Vegetables.— Not less than six varieties, decorative arrangement to be considered:

1st, W. J. Clemson, $5; 2d, Frederick Mason, $4; 3d, Mrs. A. A. Warburton, $3.

Gratuities: —

W. Heustis & Son, Purple Top Turnip, $1.
D. L. Fiske, collection of Turnips, $1.
Oliver Ames, Tomatoes and Cucumbers, $2.

Sweet Pea Exhibition.

July 15 and 16.

Beans.— Half-peck, Wax:

1st, William Whitman, $3; 2d, Mrs. A. A. Warburton, $2; 3d, W. J. Clemson, $1.

Half-peck, Green:

1st, W. J. Clemson, Farquhar's Plentiful, $3; 2d, William Whitman, Bountiful, $2.

Beets.— Twelve specimens:

1st, Frederick Mason, Crosby Egyptian, $3; 2d, Mrs. A. A. Warburton, Egyptian, $2; 3d, W. J. Clemson, Egyptian, $1.

Peas.— Half-peck, late varieties:

1st, Oliver Ames, Alderman, $3; 2d, William Whitman, Alderman, $2; 3d, Frederick Mason, Gradus, $1.

Squashes.— Summer, Long Warted, four specimens:

1st, Frederick Mason, $3; 2d, W. Heustis & Son, $2.

Summer Scallop, four specimens:

1st, W. Heustis & Son, $3.

Tomatoes.— Twelve specimens:

1st, Oliver Ames, Comet, $3; 2d, W. J. Clemson, Crackerjack, $2; 3d, Oliver Ames, Sutton's Best of All, $1.

Collection of Vegetables.— Not less than eight varieties, decorative arrangement to be considered.

1st, W. J. Clemson, $5; 2d, Frederick Mason, $4.

Gratuities: —

W. Heustis & Son, Succession Cabbages, $3.
Oliver Ames, Telephone Cucumbers, $1.
Thomas J. Grey Co., Grey's Perfection Cucumbers, $1.
W. J. Clemson, Paris Golden Celery, $1.

August 19 and 20.

Beans.— Two quarts shelled, not Lima:
1st, D. L. Fiske, $3.
Celery.— Four roots of any variety:
1st, Frederick Mason, Paris Golden, $3.
Peppers.— Twelve specimens, Bell or Bull Nose:
1st, Frederick Mason, $3.
Twelve specimens, any other variety:
1st, Frederick Mason, $3; 2d, Frederick Mason, $2; 3d, Oliver Ames, $1.
Squashes.— Marrow, three specimens:
1st, Frederick Mason, $3; 2d, Waban Gardens, $2; 3d, Waban Gardens, $1.
Sweet Corn.— Twelve ears, Crosby:
1st, E. & H. W. Moore, $3; 2d, Mrs. A. A. Warburton, $2; 3d, Frederick Mason, $1.
Twelve ears, any other variety:
1st, E. & H. W. Moore, $3; 2d, Frederick Mason, $2; 3d, Frederick Mason, $1.

Gratuities: —

Waban Gardens, Egg Plants, $1.
Mrs. A. A. Warburton, White Spine Cucumbers, $1.
E. & H. W. Moore, Imperial Tomatoes, $1.
H. A. Clark, collection of Tomatoes, $1.
George Page, Tomatoes and Cucumbers, $2.
William Whitman, collection of vegetables, $3.
Frederick Mason, " " " $3.

General Autumn Exhibition.

September 8, 9, and 10.

Gratuities: —

Mrs. A. A. Warburton, collection of vegetables, $3.
J. S. Bache, Seedling Tomato Bache's Abundance, First Class Certificate of Merit.

Special Vegetable Exhibition.

September 21, 22, 23, and 24.

Collection of Vegetables.— Twenty kinds, not more than two varieties of any one kind:

1st, Edwin Jenkins, $100; 2d, Frederick Mason, $60; 3d, A. J. Jenkins, $40.

Twelve kinds, distinct species (for market gardeners only):

1st, Waban Gardens, $60; 2d, Frederick Mason, $40; 3d, J. B. Shurtleff, Jr., $20.

Six kinds, distinct species (for cottagers only):

1st, Michael Cahalan, $30; 2d, Mrs. A. A. Warburton, $20; 3d, F. W. Dahl, $10.

Artichokes.— Globe, three heads:

1st, Edwin Jenkins, $5.

Jerusalem, four quarts:

1st, Thomas Valentine, $5.

Asparagus.— Fifty stalks:

1st, Edwin Jenkins, $10; 2d, A. J. Jenkins, $8.

Beans.— String, any round, green variety, pods, four quarts:

1st, G. H. Arnold & Sons, $5; 2d, J. B. Shurtleff, Jr., $3; 3d, Thomas Valentine, $2.

String, any round, flat, green variety, pods, four quarts:

1st, G. H. Arnold & Sons, $5; 2d, A. W. Preston, $3; 3d, William Whitman, $2.

String, any wax variety, four quarts, pods:

1st, Arthur Nixon, $5; 2d, William Whitman, $3; 3d, F. E. Coolidge, $2.

Horticultural Dwarf, four quarts, pods:

1st, Anson Wheeler, $5; 2d, Mrs. A. A. Warburton, $3.

Horticultural Pole, or any improved form thereof, four quarts, pods:

1st, H. W. Anderson, $5; 2d, E. & H. W. Moore, $3; 3d, Mrs. A. A. Warburton, $2.

Lima, any variety, four quarts, pods:

1st, Wyman Bros., $6; 2d, G. H. Arnold & Sons, $4; 3d, F. W. Dahl, $2.

Lima, any variety, shelled, two quarts:

1st, G. R. White, $6; 2d, Frederick Mason, $4; 3d, W. J. Clemson, $2.

Beet.— Egyptian, twelve roots:

1st, Frederick Mason, $15; 2d, W. W. Rawson, $10; 3d, Oliver Ames, $5.

Any other round variety, twelve roots:

1st, Oliver Ames, $8; 2d, J. B. Shurtleff, Jr., $6; 3d, W. J. Clemson, $4.

Any round variety, six roots (for cottagers only):
1st, D. L. Fiske, $4; 2d, Arthur Nixon, $3; 3d, Michael Cahalan, $2.
Long, twelve roots:
1st, Oliver Ames, $4; 2d, W. J. Clemson, $3.
Chard, six plants:
1st, C. W. Prescott, $5.

CABBAGE.— Any ball head variety, green, four heads:
1st, Frederick Mason, $6; 2d, Anson Wheeler, $4; 3d, Frederick Mason, $3.
Any flat head variety, four heads:
1st, Anson Wheeler, $6; 2d, Frederick Mason, $4.
Savoy, four heads:
1st, J. B. Shurtleff, Jr., $6; 2d, Frederick Mason, $4.
Red, four heads:
1st, Anson Wheeler, $6; 2d, Frederick Mason, $4; 3d, Thomas Valentine, $3.
Any green variety, three heads (for cottagers only):
1st, Michael Cahalan, $4; 2d, Michael Cahalan, $3; 3d, F. W. Dahl, $2.

CARDOON.— Four specimens:
1st, Vincent Buitta, $4; 2d, Waban Gardens, $3.

CARROT.— Any short variety, twelve roots:
1st, G. F. Wheeler, $4; 2d, Frederick Mason, $3; 3d, George Page, $2.
Danvers, twelve roots:
1st, Frederick Mason, $10; 2d, H. A. Harrington, $8; 3d, M. E. Moore, $6.
Any red or orange variety longer than Danvers, twelve roots:
1st, Frederick Mason, $5; 2d, E. & H. W. Moore, $4; 3d, Edwin Jenkins, $3.
Any variety, six specimens (for cottagers only):
1st, Arthur Nixon, $4; 2d, F. W. Dahl, $3; 3d, Michael Cahalan, $2.

CAULIFLOWER.— Six heads:
1st, Anson Wheeler, $15; 2d, Frank Wheeler, $10; 3d, Anson Wheeler, $5.
Three heads (market growers excluded):
1st, Michael Cahalan, $8.

CELERIAC.— Six roots:
1st, F. W. Dahl, $4; 2d, Frederick Mason, $3; 3d, W. J. Clemson, $2.

CELERY.— Boston Market, six heads:
1st, W. J. Clemson, $10; 2d, Oliver Ames, $6; 3d, Frederick Mason, $4.
Giant Pascal, six heads:
1st, W. J. Clemson, $10; 2d, Frederick Mason, $6; 3d, M. E. Moore, $4.

Paris Golden or Golden Rose, six heads:
1st, W. J. Clemson, $10; 2d, Frederick Mason, $6; 3d, Frank Wheeler, $4.

White Plume, six heads:
1st, Edwin Jenkins, $10; 2d, Frederick Mason, $6; 3d, W. J. Clemson, $4.

Any other white variety, six heads:
1st, W. J. Clemson, $5; 2d, Oliver Ames, $3; 3d, Mrs. A. A. Warburton, $2.

Any red or pink variety, other than Golden Rose, six heads:
1st, Frederick Mason, $5; 2d, W. J. Clemson, $3.

Any variety, three heads (for cottagers only):
1st, Mrs. A. A. Warburton, $4; 2d, Michael Cahalan, $3; 3d, Michael Cahalan, $2.

Chicory.— Any variety, blanched, twelve crowns:
1st, Oliver Ames, $6; 2d, Edwin Jenkins, $4; 3d, Vincent Buitta, $3.

Chives.— Plants growing in box or pan twelve inches square:
1st, Frank Wheeler, $4; 2d, Oliver Ames, $3; 3d, F. W. Dahl, $2.

Sweet Corn.— Early Crosby, six ears:
1st, Oliver Ames, $6; 2d, Mrs. A. A. Warburton, $4; 3d, G. F. Wheeler, $3.

Potter's Excelsior, six ears:
1st, Mrs. A. A. Warburton, $6; 2d, E. & H. W. Moore, $4; 3d, C. A. Moore, $3.

Stowell's Evergreen, six ears:
1st, Mrs. Lester Leland, $6; 2d, Mrs. A. A. Warburton, $4; 3d, Oliver Ames, $3.

Any other variety, six ears:
1st, Oliver Ames, $6; 2d, Mrs. A. A. Warburton, $4; 3d, G. F. Wheeler, $3.

Cucumbers.— White Spine type, four specimens grown under glass:
1st, J. H. Newman, $20; 2d, J. P. Esty, $10; 3d, J. W. Cummings, $5.

White Spine type, six specimens; grown in open ground:
1st, Waban Gardens, $6; 2d, C. W. Illsly, $4; 3d, H. M. Munroe, $3.

Pickling, twelve specimens:
1st, Frederick Mason, $4; 2d, Belleville & Waite, $3; 3d, G. R. White, $2.

Long English Frame, any variety, three specimens:
1st, Belleville & Waite, $6; 2d, A. J. Jenkins, $4.

Egg Plant.— New York Improved, four specimens:
1st, G. H. Arnold & Sons, $6; 2d, Oliver Ames, $4; 3d, Frederick Mason, $3.

Any other variety, four specimens:
1st, Oliver Ames, $6; 2d, Mrs. Boylston Beal, $4; 3d, Frederick Mason, $3.

Endive.— Curled, four plants, blanched:
1st, Frederick Mason, $6; 2d, Mrs. Boylston Beal, $4; 3d, Oliver Ames, $3.
Broad-leaved, four plants, blanched:
1st, Frederick Mason, $6; 2d, Vincent Buitta, $4; 3d, M. E. Moore, $3.
Kale.— Green Curled, four heads:
1st, Frederick Mason, $4.
Kohl-rabi.— Six roots:
1st, Oliver Ames, $5; 2d, Frederick Mason, $3; 3d, F. W. Dahl, $2.
Leek.— Carentan, twelve specimens:
1st, Oliver Ames, $6; 2d, G. H. Arnold & Sons, $4.
Musselburgh, twelve specimens:
1st, G. H. Arnold & Sons, $6; 2d, Oliver Ames, $4; 3d, Edwin Jenkins, $3.
Lettuce.— Cos or Romaine, six specimens:
1st, M. E. Moore, $8; 2d, Charles Esty, $6; 3d, E. K. Ballard, $4.
Round headed, six specimens:
1st, M. E. Moore, $20; 2d, E. K. Ballard, $10; 3d, Charles Esty, $5.
Curled or loose headed, six specimens:
1st, M. E. Moore, $5.
Martynias.— Twenty-four specimens:
1st, Frederick Mason, $4; 2d, Waban Gardens, $3; 3d, Waban Gardens, $2.
Mushrooms.— Twenty-four specimens:
1st, A. J. Jenkins, $6; 2d, Mrs. A. A. Warburton, $4.
Okra.— Twenty-four pods:
1st, Oliver Ames, $3; 2d, J. E. Murphy, $2.
Onion.— Ailsa Craig, twelve specimens:
1st, Mrs. Lester Leland, $6; 2d, Waban Gardens, $4.
Danvers, twelve specimens:
1st, Oliver Ames, $10; 2d, W. J. Clemson, $8; 3d, J. B. Shurtleff, Jr., $6.
Prize-taker, twelve specimens:
1st, Oliver Ames, $6; 2d, Frederick Mason, $4; 3d, J. B. Shurtleff, Jr., $3.
Any red variety, twelve specimens:
1st, Frederick Mason, $4; 2d, Oliver Ames, $3; 3d, Mrs. A. A. Warburton, $2.
Any white variety, twelve specimens:
1st, Frederick Mason, $4; 2d, W. J. Clemson, $3.
White Pickling, four quarts:
1st, Wyman Bros., $4; 2d, A. J. Jenkins, $3.
Parsley.— Four quarts:
1st, Oliver Ames, $4; 2d, A. W. Preston, $3; 3d, C. H. Jones, $2.
Parsnip.— Any full-crowned variety, twelve specimens:
1st, W. J. Clemson, $8; 2d, Frederick Mason, $6; 3d, D. L. Fiske, $4.

Any hollow-crowned variety, twelve specimens:
1st, M. E. Moore, $8; 2d, W. W. Rawson, $6; 3d, Thomas Valentine, $4.

Peas.— Any variety, fifty pods:
1st, Mrs. Boylston Beal, $5; 2d, G. R. White, $3; 3d, G. R. White, $2.

Peppers.— Any large, sweet variety shown green, twelve specimens:
1st, Frederick Mason, $4; 2d, J. B. Shurtleff, Jr., $3; 3d, E. H. Marshall, $2.

Neapolitan or similar type, green or red, twelve specimens:
1st, Waban Gardens, $4; 2d, H. M. Munroe, $3; 3d, E. H. Marshall, $2.

Squash, twelve specimens, or, in case of small-fruited varieties, one pint:
1st, Frederick Mason, $4; 2d, J. B. Shurtleff, Jr., $3; 3d, H. M. Munroe, $2.

Four or more varieties not previously mentioned, six specimens of each:
1st, Waban Gardens, $8; 2d, J. B. Shurtleff, Jr., $6.

Potatoes.— Early Rose type, twelve specimens:
1st, Johnson Seed Potato Co., $6; 2d, Frederick Mason, $4; 3d, D. A. Watson, $3.

Green Mountain type, twelve specimens:
1st, Johnson Seed Potato Co., $6; 2d, Frederick Mason, $4; 3d, Frederick Mason, $3.

Any other variety, twelve specimens:
1st, Oliver Ames, $6; 2d, Frederick Mason, $4; 3d, Oliver Ames, $3.

Collection of eight varieties, twelve specimens of each:
1st, Johnson Seed Potato Co., $20; 2d, Frederick Mason, $10; 3d, Frederick Mason, $5.

Sweet, twelve specimens, home grown:
1st, Oliver Ames, $5.

Pumpkin or Squash.— Heaviest specimen, any variety:
Oliver Ames, $20.

Sugar or Winter Luxury, four specimens:
1st, Anson Wheeler, $5; 2d, Oliver Ames, $3; 3d, Anson Wheeler, $2.

Radish.— Any round, red, summer variety, twenty-five specimens, not bunched:
1st, M. E. Moore, $8; 2d, Oliver Ames, $6; 3d, Waban Gardens, $4.

Any long, red, summer variety, twenty-five specimens, not bunched:
1st, J. E. Murphy, $4; 2d, Waban Gardens, $3; 3d, Frederick Mason, $2.

Any white, summer variety, twenty-four specimens:
1st, J. E. Murphy, $4; 2d, Frederick Mason, $3; 3d, Oliver Ames, $2.

White Stuttgart or other winter variety, twelve specimens:
1st, Vincent Buitta, $4; 2d, Oliver Ames, $3.

Rhubarb.— Twenty-four stalks:
1st, Frank Wheeler, $4; 2d, E. E. Pecker, $3; 3d, W. Heustis & Son, $2.

Salsify.— Twelve specimens:
1st, W. J. Clemson, $6; 2d, J. B. Shurtleff, Jr., $4; 3d, W. Heustis & Son, $3.

Spinach.— Any round leaved variety, one peck:
1st, Waban Gardens, $4; 2d, J. E. Murphy, $3; 3d, Mrs. Boylston Beal, $2.

Squash.— Bay State, three specimens:
1st, W. H. Derby, $5; 2d, G. H. Arnold & Sons, $3; 3d, J. B. Shurtleff, Jr., $2.

Delicious, three specimens:
1st, Waban Gardens, $5; 2d, Baker Farm, $3; 3d, Crosby Bros., $2.

Essex Hybrid or Warren, three specimens:
1st, Anson Wheeler, $5; 2d, W. H. Derby, $3; 3d, Waban Gardens, $2.

Hubbard or any of its varieties:
1st, E. E. Cummings, $5; 2d, Anson Wheeler, $3; 3d, J. B. Shurtleff, Jr., $2.

Marrow, three specimens:
1st, C. Cummings, $5; 2d, C. Cummings, $3; 3d, J. B. Shurtleff, Jr., $2.

Vegetable Marrow, three specimens:
1st, Oliver Ames, $5; 2d, Frederick Mason, $3; 3d, Vincent Buitta, $2.

Any other winter variety, three specimens:
1st, Waban Gardens, $5; 2d, Waban Gardens, $3.

Summer Crookneck, four specimens:
1st, Frederick Mason, $4; 2d, W. J. Clemson, $3; 3d, W. Heustis & Son, $2.

White Bush or other round summer variety, four specimens:
1st, W. Heustis & Son, $4; 2d, Thomas Valentine, $3; 3d, G. R. White, $2.

Tomato.— Any forcing variety grown under glass, twelve specimens:
1st, Oliver Ames, $20; 2d, George Page, $10; 3d, W. J. Clemson, $5.

Any outdoor scarlet variety, twelve specimens:
1st, Oliver Ames, $10; 2d, Frederick Mason, $8; 3d, Oliver Ames, $6.

Any outdoor pink variety, twelve specimens:
1st, Mrs. A. A. Warburton, Turner's Hybrid, $6; 2d, Mrs. A. A. Warburton, Imperial, $4; 3d, Mrs. A. A. Warburton, Magnus, $3.

Any large yellow variety, twelve specimens:
1st, Oliver Ames, $4; 2d, Frederick Mason, $3.

Small fruited, six varieties, one quart of each:
1st, Oliver Ames, $5; 2d, W. J. Clemson, $3; 3d, Charles Esty, $2.

Strawberry, *Physalis*, two quarts:
1st, Frederick Mason, $3; 2d, Waban Gardens, $2; 3d, J. B. Shurtleff, Jr., $1.

Turnip.— Any early, white flat or purple top white flat variety, twelve specimens:
1st, Oliver Ames, $4; 2d, Oliver Ames, $3; 3d, E. & H. W. Moore, $2.

Any white globe variety, twelve specimens:
1st, Frederick Mason, $4; 2d, Frederick Mason, $3; 3d, E. & H. W. Moore, $2.

Any purple top globe variety, twelve specimens:
1st, Oliver Ames, $4; 2d, Frederick Mason, $3.

Any early yellow variety, twelve specimens:
1st, Oliver Ames, $4; 2d, Oliver Ames, $3.

Rutabaga, any white variety, six specimens:
1st, Oliver Ames, $4; 2d, E. L. Lewis, $3; 3d, J. Goddin, $2.

Any yellow variety, six specimens:
1st, Frederick Mason, $4; 2d, J. Goddin, $3; 3d, Anson Wheeler, $2.

Collection of Vegetables.— Best collection of unusual or little known varieties, not otherwise mentioned in the schedule:
1st, Vincent Buitta, $25; 2d, H. F. Hall, $15; 3d, Oliver Ames, $10.

Salad Plants.— Best collection:
1st, Waban Gardens, $20; 2d, Frederick Mason, $15.

Gratuities: —

H. F. Hall, collection of Squashes, $8.
W. J. Clemson, collection of vegetables, $20.
G. H. Arnold & Sons, " " " $15.
J. H. Fletcher, " " " $8.
William Whitman, " " " $5.
Wyman Bros., " " " $5.
Mrs. E. M. Gill, " " " $2.
Waban Gardens, collection of unusual vegetables, $5.
Johnson Seed Potato Co., Potato Brunswick, Honorable Mention.
J. E. Murphy, new Potato, Honorable Mention.
H. B. Fullerton, "From Farm to Family" package of vegetables, Honorable Mention.
Vincent Buitta, collection of vegetables, Honorable Mention.

Duncan Finlayson
Vincent Buitta
William N. Craig
Edward Parker
Herbert W. Rawson
Committee on Vegetables.

ENTRANCE TO ESTATE OF COL. H. E. CONVERSE

REPORT OF THE COMMITTEE ON GARDENS FOR THE YEAR 1911.

Charles W. Parker, Chairman.

The Committee on Gardens has to report that the interest in this department of the Society's work during the year has been fully sustained. Thirteen visits of inspection have been made to notable estates and gardens in eastern Massachusetts and are reported upon in detail herewith, together with a list of the awards made.

The committee is more and more impressed with the importance of this department in furthering the objects of the Society. In calling attention to gardens and estates which receive its approval as models of their kind and examples of tasteful arrangement and high-class cultivation it certainly renders a service to that ever increasing class of people who are becoming interested in the suburban and rural life.

In addition to the awards of the H. H. Hunnewell Triennial Premium the committee has awarded eleven Silver Medals, five Bronze Medals, one Honorable Mention, and two First Class Cultural Certificates. The recent change in substituting medals in place of money for prizes has proved a successful innovation and will be continued for the immediate future.

George E. Barnard's Estate at Ipswich.

The first visit of the season was made on June 1 to the estate of George E. Barnard at Ipswich, Massachusetts, to inspect his gardens of spring-flowering plants. Although the season had been very unfavorable thus far, on account of the unusual lack of rain during the past two months, the numerous gardens on the estate proved well worth a visit.

The most noticeable change made in the grounds since the committee's inspection of the previous year is the extension of the rock garden. This has been carried up on the adjoining hillside and a structure erected composed of large rocks making it the most conspicuous feature of the estate.

A miniature rocky ravine, thickly bordered with Osmunda ferns, through which flows a stream of water from the height above, adds much to the effect and when the present plantings of hardy perennial shrubs and herbaceous flowering plants cover the rocky mass it will be a model rock garden.

On the upper slope of the hill forming a suitable background for the rockery is a row of spruces and the lower slopes are filled in with a collection of rhododendrons and azaleas now in fine flower. Although lacking as yet the finish which will be added when the rocky bank is covered with flowers and foliage the whole scheme is effective and promises to make this estate a notable one on the North Shore.

To the head gardener, John S. Critchley, credit is due for the skill and taste displayed in bringing to a completion this notable undertaking. Conspicuous among the masses of flowering plants in the various gardens were *Lychnis viscaria*, *Hesperus matronalis*, in white and purple, *Kerria japonica*, *Deutzia Lemoinei*, *Azalea mollis*, yellow alyssum, columbines, in blue, white, and yellow, irises, lupins, geraniums, pansies, and zinnias.

Wilton Lockwood's Estate at Orleans.

On June 21 the committee had the privilege of visiting the interesting estate of Wilton Lockwood at South Orleans, Massachusetts, and were greatly surprised as well as pleased to see what could be done in the line of ornamental gardening on Cape Cod, a section of the state usually regarded as not responsive to horticultural endeavor.

In a hollow among the hills, not far back from the Atlantic shore, Mr. Lockwood has established a garden and produced results well worthy a record in this report. At the bottom of the valley is a small artificial pond well stocked with hardy Nymphaeas

and other water plants and bordered by a grassy bank. Around this bank, on level ground, is a collection of some three hundred varieties of peonies, of the choicest kinds and mostly in light colors. Notable among them are several plants of the recently introduced hybrids of the pure yellow peony, *lutea superba.*

The whole garden up to the base of the surrounding hills is enclosed by a pergola covered on sides and top with numerous varieties of climbing and rambler roses. Particularly noteworthy among them was the Carmine Pillar which covered a stretch of trellis twenty-five feet in length and presented a magnificent display. The Jersey Beauty with large, creamy-white flowers was also conspicuous as well as the Moschata and the Dawson. There was also a collection of hybrid tea and perpetual roses, and among the trees and shrubs a row of the pyramidal oak attracted attention.

All along the roadsides and in grassland around the dwelling houses in the town were masses of the deliciously fragrant Pheasant's Eye pink (*Dianthus plumarius*) which greatly interested the visitors. It is a frequent escape from old gardens on the Cape and is noticeably abundant in Orleans. There were also frequent patches of the Scotch broom (*Cytisus scoparius*) with its masses of golden flowers and apparently perfectly hardy here, though not so in the vicinity of Boston.

Col. H. E. Converse's Estate at Marion.

June 26 the committee made its third visit to the "Moorings," the seashore estate of Col. Harry E. Converse at Marion, Massachusetts, which was duly entered two years since for the H. H. Hunnewell Triennial Premium.

The continued effort to bring this grand estate up to a high standard was especially noted this year and it would seem that little more need be done in the way of further improvement.

The finely finished system of roads through the woodlands on the estate was particularly commented upon and the extensive clearing away of the undergrowth makes charming vistas in every direction. Most of the roadsides are bordered by broad grassy

margins but occasionally plantations of roses and rhododendrons add a pleasing touch of brighter coloring.

The water garden has been enlarged since the visit of last season and two Japanese bridges, bordered with trailing vines and flowering plants, give a pretty decorative effect. A large new rockery in which tree stumps have been interspersed was one of the novelties of the present year and when the numerous plants on it are fully grown they may cover up what at present cannot be considered a desirable feature.

It is hardly necessary in this report to refer again to the various fruit, flower, and vegetable gardens or to the houses of chrysanthemums, orchids, palms, and fruits, all of which were inspected and found in excellent condition; but special mention must be made of the rose garden in which the visitors lingered long and left reluctantly. Perhaps it was the brightness of a June day that helped the impression made by this wonderful garden, but it is certain that for pleasing arrangement and fine quality of plants and blooms this rose garden is deserving of the highest possible praise. Especially noteworthy blooms were the Frau Karl Druschki and Mme. Plantier, white; Ulrich Brunner, Gruss an Teplitz, and Baron de Bonstettin in reds; Gabriel Luizet and Killarney, pink; Baroness Rothschild and Mrs. John Laing in rose; and the Persian Yellow and Soleil d'Or in yellow and orange. The climbing rose, the creamy-white Jersey Beauty, was also in attractive condition.

It would be easy to still further lengthen this report by dwelling upon many other interesting features of this estate. The personal interest of the owner, Col. Converse, in the development of the grounds, supplemented by the professional experience and horticultural skill of David F. Roy, in the planning and superintendence have produced such results that the committee is glad to present the "Moorings" as an example of landscape art worthy of high commendation and therefore adds it to the long line of notable estates in New England to which has been awarded the Hunnewell Premium.

VIEW ON ESTATE OF COL. H. F. CONVERSE

Mrs. Harriett R. Foote's Rose Garden.

June 29 the committee visited the rose garden of Mrs. Harriett R. Foote at Marblehead, Massachusetts. Mrs. Foote is adding constantly to her collection which now contains about a thousand different kinds. Her object is to test the hardiness and desirability of many varieties, especially of the more recent introductions, that she may select those most satisfactory for this latitude.

Her garden presented a brilliant spectacle and her success and increasing reputation in this line furnish another illustration of what woman can do in horticulture.

Charles S. Eaton's Vegetable Garden.

On June 29 the committee inspected also the vegetable garden of Charles S. Eaton at Marblehead Neck. This is a private garden growing the various vegetables ordinarily cultivated for home use. It is a plot about ninety feet square, enclosed by a tall wire fence, and in its arrangement and neatness is a model garden of its kind. A tidy and clean vegetable garden is always an attractive sight and in this case rendered additionally so by numerous ornamental plants and climbing roses growing around the borders.

The home grounds of Mr. Eaton are beautifully and thickly planted with many varieties of hardy shrubs and evergreens, and the lawns especially were the finest the committee had seen this year. The rose garden also is deserving of special notice.

James Warr, the gardener of the estate, has reason to be proud of the results obtained both in the vegetable garden and in the more ornamental portion of the grounds.

Dr. Harris Kennedy's Iris Garden at Milton.

July 7 the committee was invited to visit the collection of Japanese irises grown by Dr. Harris Kennedy at Milton.

In a somewhat boggy piece of ground in open pasture land Dr. Kennedy has got together some fifty varieties of *Iris Kaempferi*

ranging in color from white to blue and deep purple. The arrangement follows closely the real Japanese method, with a raised walk around the margins, and with the usual accessories of lanterns and other ornaments. In the adjoining grassland several low tables with coverings of bright red blankets add to the oriental aspect of the scene. It was a unique and interesting garden and one that the committee takes especial pleasure in pointing to as an example of what can be done in the artistic treatment of a special class of flowering plants.

Although the iris garden was the principal object of interest on this occasion the visitors found many other objects that attracted their attention in the fine collections of notable trees, shrubs, and flowers on Dr. Kennedy's estate.

Thomas E. Proctor's Estate at Topsfield.

On July 11 the committee had the pleasure of visiting the notable estate of Thomas E. Proctor at Topsfield, Massachusetts. It comprises an area of some three thousand acres diversified by hills, valleys, meadows, ponds, and native woodlands, and evidently intended to contain at length a collection of hardy trees, shrubs, and herbaceous plants that will make it one of the noteworthy arboretums of the country.

A great variety of trees and shrubs from all parts of the world that will prove hardy here has been already planted and in addition to this feature other lines of horticultural interest have not been neglected. There are numerous greenhouses devoted to the culture of ornamental tropical plants, orchids, ferns, chrysanthemums, etc., and also to the growing of many kinds of fruits, such as apples, pears, peaches, nectarines, grapes, and oranges.

On the grounds around the house are long lines of pergolas covered with many varieties of climbing roses and trellises of grapes of almost every known kind that promise to be hardy here.

Then there is on another part of the estate a rockery that would exhaust one's stock of adjectives to adequately describe. A whole hillside rising from the border of a pond has been devoted to this purpose and among the boulders of which it is formed and

THE ROSE GARDEN. ESTATE OF COL. H. E. CONVERSE

in its damp grottos are planted an almost innumerable collection of hardy shrubs and herbaceous and alpine plants. In the woodland around the pond are plantations of rhododendrons and hardy evergreens intermixed with the no less attractive native trees, shrubs, and flowering plants.

The visitors were shown over the estate by the head gardener, James Marlborough, whose skill in the gardener's art as manifested in the results obtained here is worthy of mention.

Andrew Gray Weeks' Estate at Marion.

July 14 the committee again had the pleasure of a visit to the estate of Andrew Gray Weeks at Marion, Massachusetts. Continued improvement marks the progress in the development of this notable seashore home. The work done the present season includes the extension of the lawn in front of the house clear down to the water's edge and the filling in of the marsh formerly existing there. This change has necessitated the construction of a concrete retaining wall and in the space thus reclaimed will be planted groups of trees and shrubs which will add much to the beauty of the foreground in connection with the broad expanse of the waters of the bay.

Of hardly less interest is the treatment of the dozen or more acres of woodland at the rear of the home grounds. The well-kept roads and paths through this section are bordered by plantations of Japanese irises, rhododendrons, and native ferns, all of which are doing finely, and in connection with the native growth make a ramble through this part of the estate one of more than usual interest.

Oliver Ames' Vegetable Garden at North Easton.

August 3 the committee inspected the vegetable garden on the Oliver Ames Estate at North Easton, Massachusetts. An area of about two acres of level ground has been selected for this purpose and enclosed on three sides by a substantial stone wall made of the

loose rocks which abound on the place. Broad gravel paths bordered by an edging of sod give convenient access to every part of the garden and at the main entrances to the grounds plats of flowering plants and wire trellises covered with rambler roses give evidence that a vegetable garden can be made an ornamental feature of an estate.

The main garden was devoted to the culture of almost every known kind of culinary vegetables and was in splendid condition; in brief, it was an ideal vegetable garden made a reality.

The estate of which this garden is only one feature contains about 160 acres and is diversified by rock ledges, masses of woodland, and finely kept grassland. There were also greenhouses devoted to the cultivation of vegetables and flowering and foliage plants, and a nursery of white pine seedlings from which many thousands of young trees are being transplanted to various portions of the grounds.

Great credit is due to Edward Parker, the head gardener, for the satisfactory results obtained under his administration.

Dr. W. G. Kendall's Fruit Garden at Atlantic.

August 15 the committee visited again the interesting fruit garden of Dr. Walter G. Kendall at Atlantic.

Situated in a deep bowl-shaped hollow in the hill its steep terraced sides afford protection from the winds that blow from the neighboring marshes and harbor and in this sheltered sunny spot Dr. Kendall has succeeded in producing a large number of apple, pear, peach, and plum trees, together with about fifty grapevines and other small fruits.

By watchful care and intelligent oversight the quality of the fruit produced in this garden is about as near perfection as it is possible to attain. A tree of the Carman peach, heavily laden with ripe fruit, presented a living example of the possibilities of fruit culture in this seacoast region. The grapevines in which Dr. Kendall is evidently especially interested were in a condition of fruitage that suggested something more than ordinary ability in grape culture. His favorite varieties of the grape are the Worden, Niagara, Salem, Delaware, and Diamond.

George E. Barnard's Gardens at Ipswich.

On September 7 the committee again visited the gardens of George E. Barnard at Ipswich and found them brilliant with the flowering of the early autumn. The velvety lawns bordered with masses of flowering plants showed the refreshing influence of the recent rains and the various vegetable and fruit sections were in their usual fine condition.

The rock garden was very well covered for the first year and the water garden was an attractive feature of the estate. The double row of fruit trees grown *en espalier* along one of the main paths showed a high degree of skill in producing the results obtained and the condition of the entire estate, which has become a notable one in this region, reflected credit both upon the owner for his horticultural enthusiasm and upon the head gardener, John S. Critchley, for his professional ability in carrying out the work.

The Turner Hill Orchard at Ipswich.

On September 7 the committee also inspected the great orchards of the Turner Hill Farm at Ipswich of which Fred A. Smith is the general manager.

Here have been set out during the last five or six years a notable collection of large and small fruits and the object of the enterprise is to show the possibility of profitable orcharding on a large scale in this section of the country. About one hundred acres have been planted thus far, containing some ten thousand fruit trees, principally of the apple. The trees are planted 20 × 20, every other row containing semi-permanent varieties used as fillers, such as Yellow Transparent, Duchess, Wealthy, and Wagener, eventually leaving the trees 40 × 40. The principal varieties grown are the McIntosh, Wealthy, and Baldwin, although many other varieties are included in smaller number.

There are also large blocks of pear trees of the Bartlett, Bosc, and Clapp's Favorite, and in some of the orchards raspberries and currants have been grown for several years, proving thus far a profitable crop.

Many of the trees are now coming into bearing and the outlook for the enterprise is certainly encouraging. A noticeable feature in the work is the high quality of fruit produced showing the beneficial results of the methods employed. The land which varies from coarse gravel to good loam is constantly cultivated and the orchards are sprayed three times during the season.

As this is probably the largest orchard in this part of the state the outcome of the experiment will have an important influence in the fruit interests of Massachusetts.

The prizes awarded for the year are as follow:

H. H. Hunnewell Triennial Premium.

For an estate of not less than three acres planted in the most tasteful and effective manner, with the most desirable ornamental trees and shrubs, and kept in the best order for three successive years:

First, Col. Harry E. Converse, Marion . . .	$160.00
Second, Andrew Gray Weeks, Marion . . .	80.00

Society's Prizes.

For a garden of spring-flowering plants, not commercial:

First, George E. Barnard, Ipswich	Silver Medal

For a garden of summer or fall-flowering plants, not commercial:

First, George E. Barnard, Ipswich	Silver Medal

For a garden or collection of peonies, not commercial:

First, Wilton Lockwood, South Orleans	Silver Medal

For a garden or collection of hardy roses, not commercial:

First, Col. H. E. Converse, Marion	Silver Medal
Second, Wilton Lockwood, South Orleans	Bronze Medal

For a garden or collection of irises, not commercial:

First, Dr. Harris Kennedy, Milton	Silver Medal

For a rock garden:

First, Charles W. Parker, Marblehead	Silver Medal
Second, George E. Barnard, Ipswich	Bronze Medal

For a water garden:

First, Col. H. E. Converse, Marion	Silver Medal

Dr. Harris Kennedy's Iris Garden

Second, George E. Barnard, Ipswich	Bronze Medal
For a garden of large or small fruits:	
First, Dr. Walter G. Kendall, Atlantic	Silver Medal
Second, George E. Barnard, Ipswich	Bronze Medal
For a vegetable garden, not commercial:	
First, Oliver Ames, North Easton	Silver Medal
Second, George E. Barnard, Ipswich	Bronze Medal

Special Awards.

C. S. Eaton, Marblehead, for fine condition of vegetable garden, Honorable Mention.

Mrs. Harriett R. Foote, Marblehead, for superior cultivation of roses, First Class Cultural Certificate.

Fred A. Smith, Ipswich, for superior cultivation of the apple, First Class Cultural Certificate.

David F. Roy, Marion, for skilful superintendence of the Converse Estate, Silver Medal.

James Marlborough, Topsfield, for skilful superintendence of the Proctor Estate, Silver Medal.

Charles W. Parker
Arthur F. Barney
Arthur H. Fewkes
T. D. Hatfield
William Nicholson
John A. Pettigrew
William P. Rich
Charles Sander
J. B. Shurtleff, Jr.
Wilfrid Wheeler

Committee on Gardens.

REPORT OF THE COMMITTEE ON LECTURES AND PUBLICATIONS FOR THE YEAR 1911.

By Edward B. Wilder, Chairman.

Your committee with some trepidation decided to try the experiment this year of changing the hour of the lectures from 11 A. M. to 2 P. M.

The experiment has proved most satisfactory. Beginning the first lecture with an audience of two hundred and fifty persons we reached an attendance at the last lecture of five hundred, with an average (including one very stormy Saturday) of about three hundred per day for the whole course. We respectfully submit the following Program of Lectures and Discussions for 1912, a copy of which has been mailed to every member of the Society.

In preparing this program it has been our endeavor to include all the different departments of the work carried on by this Society and at the same time secure a program which would be instructive and interesting with eminent lecturers on vital horticultural subjects.

Program of Lectures for 1912.

January 13. Vocational Agricultural Education. By Rufus W. Stimson, Boston.

January 20. Plant Introduction as a Government Policy. By David Fairchild, Washington.

January 27. Insect Pests of the Garden and Orchard. By Prof. Edson F. Hitchings, Orono, Maine.

February 10. General Discussion on Flower Culture. Opened by Robert Cameron, Cambridge.

February 17. Fungous Diseases of the Chestnut and Other Trees. By Dr. Haven Metcalf, Washington.

February 24. A Year's Vegetable Supply from the Home Garden. By Wm. N. Craig, North Easton.

March 2. General Discussion on Fruit Culture. Opened by Wilfrid Wheeler, Concord.

March 9. Planning and Starting an Orchard. By F. A. Smith, Ipswich.

March 16. My Fourth Botanical Expedition to China. By E. H. Wilson, Jamaica Plain.

March 30. Color Arrangement in Flower Gardening. By Mrs. Francis King, Alma, Michigan.

EDWARD B. WILDER
JOHN K. M. L. FARQUHAR
CHARLES W. HOITT
WILLIAM P. RICH
Committee on Lectures and Publications.

REPORT OF THE DELEGATE TO THE STATE BOARD OF AGRICULTURE FOR THE YEAR 1911.

By Wilfrid Wheeler, Delegate,

The work of the State Board of Agriculture for the year past has been perhaps more varied than usual and along several new lines. It may be summed up under the following heads.

Office work.
Legislation.
Exhibitions.
Meetings, Demonstrations, and Lectures.
Publications.

Office Work.

The Legislature appropriated $800.00 for extra clerical work the past year and the Board has been able to add a stenographer to its office force, thus facilitating the answering of letters and of inquiries for the literature of the Board.

The Library also has been newly catalogued and arranged so that all of the books are accessible, and a card index has been made out.

Legislation.

A bill introduced by the Board providing for an apiary inspector was passed by the Legislature. Bee diseases had made such havoc in this state that it was deemed necessary to ask for state aid in fighting this enemy of the honey bee, hence this law.

The appropriation for the nursery inspector was raised from $2000.00 to $12000.00 owing to the necessity for stricter inspection of nurseries and imported nursery stock. Various bills for milk legislation came up during the year some of which were opposed

and others approved by the Board; however, very little was accomplished along these lines. Bills for the greater protection of our native birds were approved by the Board through the State Ornithologist.

Exhibitions.

The Board took a very active part in the Land and Irrigation Show in New York; also in the New England Fruit Show. In New York the Board placed on exhibition about 100 boxes of apples and the same number of garden vegetables, besides corn and other farm crops. This Massachusetts exhibit formed one of the most pleasing features of the entire show, and received much favorable comment, not only from the people who visited the show but also from the Press. Charts were displayed by giving the best locations for growing farm and other crops in Massachusetts, also location of available land for sale. These same charts were also very widely used at the fairs in our own state, and in every case an attendant was on hand to answer inquiries concerning them and to explain their use.

At the New England Fruit Show the Board offered about $500.00 in prizes, paid a part of the expenses of an expert apple packer from Oregon, and did much to encourage growers to exhibit their fruit.

Meetings, Demonstrations, etc.

The usual meetings of the Board have been held the past year—the annual meeting in January, the summer meeting in July at Concord, where a good program attracted many farmers. Dr. H. J. Wheeler of Rhode Island spoke on Alfalfa and a visit was made to the Asparagus Experiment Station. The winter meeting at Barre was one of the most successful ever held by the Board, and was very largely attended. Of special interest at this meeting were papers on The Influence of Soil Variation on Crop Production by Henry J. Wilder, U. S. Dept. of Agriculture; and Sanitary Milk Production by Dr. C. E. North, New York, N. Y.

A number of demonstrations and special lectures were made by

the Board upon requests of Farmers' Clubs and other Societies. This work bids fair to become one of the best features of our activities.

Publications.

The principal publications of the year were, Agriculture of Massachusetts for 1910, containing the report of the Secretary of the Board, and statistics relating to Massachusetts Agriculture; a reprint of the Farm Catalogue, of which over five thousand were distributed; numerous pamphlets on subjects relating to farm crops were also issued: Crop reports from May to October containing articles as follows: Growing of Cabbage and Cauliflower, Growing of Squash, Melons and Cucumbers, Market Garden Root Crops, Beans, Corn, Tomatoes, Some essentials in Bee Keeping, and Cultivation of Mushrooms.

These were printed in editions of from 6500 to 7300 practically all of which have been exhausted. Bulletin No. 5 on Vegetable Growing contains articles of special value on all sorts of vegetable crops. Nature leaflets to the number of over 65,000 were reprinted and a large number distributed. Reprints of other reports and bulletins were also made to the number of over 10,000.

In spite of things left undone that might have been accomplished, the work of the Board for the year has, on the whole, been very satisfactory. An endeavor has been made to place agriculture on a firmer and more profitable basis by bringing before the farmers the latest and most approved methods in general farming, by giving results accomplished by successful men along particular lines, by the encouraging of better market facilities, and by the advertising of products through exhibitions and displays. The Board of Agriculture feels that never were the chances better, nor the results from good agriculture safer, than at the present time in Massachusetts.

REPORT OF THE SECRETARY AND LIBRARIAN FOR THE YEAR 1911.

The Secretary and Librarian presents herewith his tenth annual report covering the eighty-second year of the Society's existence.

Ten exhibitions of the products of the garden, orchard, farm, and greenhouse have been given, but owing to the unusual drought of the spring and summer months some of them did not attain the Society's standard of quality and quantity.

It is probable, also, that the great exhibition of the Society of American Florists and allied organizations, held in this city in March, had the effect of lessening the interest in our flower shows, both on the part of the public and the local exhibitors.

A special feature of the Schedule for the year was an exclusive exhibition of vegetables held in September in which the Boston Market Gardeners' Association took an active interest not only in the exhibits of the products of the market gardens of New England but by contributing a substantial sum to the list of prizes offered. It was without doubt the greatest exhibition of culinary vegetables ever held in this country.

In addition to our own exhibitions several others deserve mention in the horticultural record of the year.

In September the New England Dahlia Society held its third public display of dahlias in our halls, furnishing a vivid illustration of the progress and improvement made in recent years in the cultivation of this ever popular flower. A noteworthy fact of this exhibition was that although no money prizes were offered a great display was secured. It should be stated, however, in this connection, that the majority of the exhibitors were more or less engaged in the commercial exploitation of the dahlia.

In October the Second Biennial New England Fruit Show was held in Horticultural Hall under the auspices of the Boston Chamber of Commerce. It proved a most successful event and like the first one held two years ago has exerted a widespread influence in

attracting public attention to New England as a desirable fruit growing region. The improvement in the New England apple, especially, in recent years, was well shown at this last exhibition and the product now compares favorably with that of any section of the country.

In December a second exhibition of photographs of Chinese vegetation and scenery was given in the large hall for one week. It comprised some 400 views made by Mr. E. H. Wilson, in charge of the Arnold Arboretum Botanical Exploration Expedition to western China during the year 1910. The views were of unusual excellence and attracted a large number of interested visitors.

The annual course of lectures on horticultural subjects held on Saturdays during January, February, and March proved one of the most successful in recent years and the largely increased attendance was due in great part to the change of hour from eleven o'clock in the forenoon to two o'clock in the afternoon. So pronounced was the approval of this change of a time-honored custom of the Society that it may be regarded as established for the future.

Full abstracts of most of these lectures, prepared in advance, were printed in the Boston Evening Transcript of the day of the lecture from which separates were struck off and distributed to other papers throughout the country. By means of these reprints and the revised and completed copy published in the Transactions of the Society a wide circulation is obtained.

The annual reports of the chairmen of the various committees published in the Transactions contain detailed descriptions of the exhibitions of the year and are valuable as records of the progress of horticulture in this section of the country. The Society is fortunate in having so many interested members of these committees who have a wide reputation as experts in their several lines.

The membership record of the year includes the election of 21 life and annual members and 7 corresponding members, and the death of 16 members and 5 corresponding members has been reported.

The publications of the year and the dates of issue have been as follow:

February 15. Schedule of Prizes and Exhibitions, 1911, pp. 1–44.

May 15. Transactions, 1910, Part 2, pp. 100–235 and plates 1–8.

August 16. Transactions, 1911, Part 1, pp. 1–77.

The Library.

Work on the proposed new catalogue of the library has been in progress throughout the year with a good prospect of its completion by the end of 1912, after which date it is intended to begin its publication.

There has been the usual steady flow of accessions which it is hoped may be largely increased during the ensuing year in order that the catalogue may be made as complete as possible.

Attention is again called to the advantages offered by the Society's great collection of horticultural literature. All persons interested in horticulture, whether members of the Society or not, are cordially invited to visit the library and the Librarian and his assistants are always ready to extend every facility possible to those in search of horticultural information.

In addition to the usual week day hours from 9 A. M. to 5 P. M. the library is open also on exhibition Sundays from 2 to 6 P. M.

In closing the record of another year the Librarian feels moved to express his appreciation of the interest shown by the Board of Trustees in this department of the Society's activities, through the liberal appropriations made, and especially of the personal interest and helpfulness of the Chairman and members of the Library Committee.

William P. Rich,
Secretary and Librarian.

REPORT OF THE TREASURER FOR THE YEAR 1911.

MASSACHUSETTS HORTICULTURAL SOCIETY *in account current with* WALTER HUNNEWELL, *Treasurer, December 31, 1911.*

DR.

Paid for Library from Appropriation	$400 00	
" " " " J. W. D. French Fund	167 05	
" " " " J. S. Farlow Fund	55 59	622 64
" " Heating	929 82	
" " Lighting	2,083 78	
" " Labor	2,536 55	
" " Stationery and Printing	886 65	
" " Postage	182 48	
" " Insurance	2,631 67	
" " Incidentals	1,082 36	
" " Repairs	488 60	
" " Committee on Lectures and Publications	279 00	
" " Salaries of Officers	2,844 04	
" " " Committee on Plants and Flowers	316 20	
" " " " " Fruits	145 00	
" " " " " Vegetables	197 00	
" " Expenses Committee on Gardens	109 63	
" " Medals	404 08	
" " Library Catalogue	370 00	15,486 86
" " Prizes for Plants and Flowers	1,803 00	
" " Prizes for Fruits	683 00	
" " Prizes for Vegetables	2,056 00	
" " Prizes for Children's Gardens	104 50	
" " H. H. Hunnewell Triennial Premium	240 00	
" " H. A. Gane Fund	30 00	
" " Geo. R. White Medal of Honor	232 15	
" " John C. Chaffin Fund	31 00	5,179 65
" " 12,000, 5% Pacific Telephone Bonds		11,670 00
Balance December 31, 1911, Treasurer and Bursar		10,745 07
		$43,704 22

Cr.

Balance December 31, 1910			$18,261 66
Received Rents		$6,548 52	
" Exhibitions	810 15		
" less expenses	395 75	414 40	
" Membership Fees		714 00	
" Mount Auburn		4,918 41	
" State Bounty		600 00	
" Sundry Donations		57 70	
" Boston Market Gardeners' Ass'n.		500 00	13,753 03
" Interest on securities from the following funds:			
S. Appleton		50 00	
J. A. Lowell		50 00	
T. Lyman		550 00	
J. Bradlee		50 00	
B. V. French		25 00	
H. H. Hunnewell		200 00	
W. J. Walker		117 72	
L. Whitcomb		25 00	
B. B. Davis		25 00	
M. P. Wilder		50 00	
J. L. Russell		50 00	
F. B. Hayes		500 00	
H. A. Gane		50 00	
J. S. Farlow		100 00	
J. D. W. French		200 00	
B. H. Pierce		32 00	
J. C. Chaffin		40 00	
B. V. French, No. 2		120 00	
G. R. White		200 00	
J. S. Farlow, Newton		116 00	
J. A. French		200 00	2,750 72
" Interest and dividends on securities other than those for the above funds		8,910 31	
" Old checks, never presented		28 50	8,938 81
			$43,704 22

Assets.

Real Estate	$518,564 63	
Furniture and Exhibition Ware	10,796 96	
Library	45,110 47	
Plates and History	235 50	
$2,000 Kansas City, Clinton, and Springfield Bonds	1,980 00	
10,000 Lake Shore and Mich. So. Bonds	$10,415 25	
21,000 City of Newton Bonds	24,228 75	
50,000 Atch. Topeka and S. F. Bonds	44,693 25	
50,000 Chicago Burl. and Quincy Bonds	50,012 50	
10,000 Chicago and West Mich Bonds	9,987 50	
25,000 K. C. F. S. and Memphis Bonds	27,523 75	
50,000 C. B. and Q. Illinois Bonds	51,625 00	
8,000 Boston and Maine Bonds	8,710 00	
5,000 West End Street R'y Bonds	5,162 50	
$4,000 Amer. Tel. and Tel. Bonds	4,110 00	
12,000 Pacific Telephone Bonds	11,670 00	
200 shares General Electric Stock	12,909 90	
Hayes and Loring, Trustees	2,308 66	
Cash in hands of Treasurer	9,681 58	
" " " " Bursar	1,063 49	
		$850,789 69

Liabilities.

Funds invested in Bonds and Stocks:		
S. Appleton	Fund	$1,000 00
J. A. Lowell	"	1,000 00
T. Lyman	"	11,000 00
J. Bradlee	"	1,000 00
B. V. French	"	500 00
H. H. Hunnewell	"	4,000 00
W. J. Walker	"	2,354 43
L. Whitcomb	"	500 00
B. B. Davis	"	500 00
M. P. Wilder	"	1,000 00
J. L. Russell	"	1,000 00
F. B. Hayes	"	10,000 00
H. A. Gane	"	1,149 00
J. S. Farlow	"	2,559 06
J. D. W. French	"	5,033 28
B. H. Pierce	"	800 00
J. C. Chaffin	"	1,210 89

B. V. French, No. 2 Fund	3,000 00	
J. A. French "	5,000 00	
G. R. White "	5,000 00	
J. S. Farlow, Newton "	2,900 42	
C. L. W. French "	10 80	60,517 88
Surplus		790,271 81
		$850,789 69

WALTER HUNNEWELL,
Treasurer.

MEMBERSHIP OF MASSACHUSETTS HORTICULTURAL SOCIETY.

DECEMBER 31, 1911.

Life Members, December 31, 1910		685	
Added in 1911		11	
Changed from Annual		3	
		699	
Deceased		17	682
Annual Members, December 31, 1910		155	
Added in 1911		9	
		164	
Deceased	5		
Changed to Life	3		
Dropped for non-payment of assessment for 2 years	1	9	155
Membership, December 31, 1911			837

INCOME FROM MEMBERSHIP.

11 New Life members at $30	$330 00
9 New Annual Members at $10	90 00
1 Changed to Life	20 00
2 " " " (Dues remitted)	
Assessments for 1911	294 00
	$734 00

WALTER HUNNEWELL,
Treasurer.

AUDITOR'S CERTIFICATE.

28 State Street, Boston,
January 25th, 1912.

To the Finance Committee of the
Massachusetts Horticultural Society.

Gentlemen:

In conpliance with your request I have made a thorough audit of the books and general accounting affairs of the Massachusetts Horticultural Society for the year which ended with the thirty-first day of December, 1911, and herewith submit to you my report of the same.

Report.

I have proved the correctness of the ledger, journal, and cash books and the small books tributary to the cash books, and saw that all balances were properly carried forward. I examined all vouchers and checks representing the disbursements during the year and found the amount of cash required by the cash book upon the first day of January, 1912, to have been on hand and also examined the securities of the Society, finding them in all details in accordance with the requirements of the records. I traced all postings from the journal and cash books into the ledger and certify that the balance sheet taken from it as of the 31st of December, 1911, is a correct abstract and that the Treasurer's statement of the assets and liabilities of the Society upon said date is true to the best of my knowledge and belief.

In short, I satisfied myself that the work in connection with the accounting affairs of the Society was being intelligently and faithfully performed and that the books and papers of the Society were in commendable condition.

Yours very respectfully,

Andrew Stewart,
Certified Public Accountant.

THE ANNUAL MEETING, NOVEMBER 18, 1911.

HOLLY TREE (ILEX OPACA) ON ESTATE OF COL. H. E. CONVERSE

ANNUAL MEETING FOR THE YEAR 1911.

The Annual Meeting of the Society for the year 1911 was held at Horticultural Hall, Boston, on Saturday, November 18, at twelve o'clock. In the absence of the President and Vice-Presidents Nathaniel T. Kidder, by vote of the meeting, was elected to preside.

Mr. Kidder, in calling the meeting to order, stated that it was held in accordance with the requirement of the By-laws for the election of officers for the ensuing year and for the transaction of such other business as might be legally presented; and that a printed notice of the meeting had been mailed to the address of every member of the Society as it appeared upon the records of the Secretary. He appointed Edward B. Wilder, J. Allen Crosby, and William P. Rich, a committee to receive, assort, and count the ballots, and to report the number, and declared the polls open, to remain open until four o'clock.

On motion of Mr. Crosby it was voted to dispense with the reading of the record of the last meeting of the Society.

The Chairman announced that the Board of Trustees had made an appropriation of $6000.00 for prizes and gratuities for the year 1912.

On recommendation of the Trustees M. Emile Lemoine of Nancy, France, was elected a Corresponding Member of the Society.

A communication from the Secretary of the State Board of Agriculture was read by the Secretary calling attention to the public winter meeting of the Board to be held at Barre, Massachusetts, December 5, 6, and 7 next.

Edwin L. Lewis of Taunton addressed the meeting on the subject of alleged violation of the rules of the Society by the exhibition of products not grown by the exhibitor. He also complained of unfair treatment at recent exhibitions. It was voted that the statements of Mr. Lewis be referred to the Committee on Prizes and Exhibitions.

No other business being presented a recess until four o'clock was declared and Mr. Wilder was appointed Chairman, *pro tem.*

At four o'clock the Chairman declared the polls closed and the ballot committee proceeded to count the ballots, reporting as follows:

Whole number of ballots cast, 84. For President, Charles W. Parker, 80; for Vice-President, Walter Hunnewell, 81; for Trustee for one year, Richard M. Saltonstall, 76; for Trustees for three years, Thomas Allen, 56, F. Lothrop Ames, 22, William H. Bowker, 12, Peter Fisher, 28, Harry F. Hall, 63, Henry M. Howard, 10, Thomas Roland, 74, Charles S. Sargent, 55; for Delegate to the State Board of Agriculture, Wilfrid Wheeler, 72; for Nominating Committee, Robert Cameron, 71, Kenneth Finlayson, 71, Walter G. Kendall, 70, C. Minot Weld, 70, Frank Wheeler, 69.

Chairman Wilder declared the list as follows to be the duly elected officers of the Society for the year 1912:

President	Charles W. Parker
Vice-President (for two years),	Walter Hunnewell
Trustee (for one year)	Richard M. Saltonstall
Trustees (for three years),	Thomas Allen Harry F. Hall Thomas Roland Charles S. Sargent
Delegate to the State Board of Agriculture (for three years),	Wilfrid Wheeler
Nominating Committee	Robert Cameron Kenneth Finlayson Walter G. Kendall C. Minot Weld Frank Wheeler

The meeting was then dissolved.

William P. Rich,
Secretary.

NECROLOGY, 1911.

NECROLOGY, 1911.

Lawrence Carteret Fenno of Boston, a member of the Society since 1899, died at his summer home in Rowley, Massachusetts, January 3, 1911, in his 53d year.

Charles E. Swain of West Roxbury, Massachusetts, a member of the Society since 1891, died January 8, 1911, in his 58th year. Mr. Swain was much interested in fruit culture and was a frequent exhibitor at the Society's exhibitions, taking many premiums for the high quality of his products.

Timothy McCarthy, formerly of Boston, but for many years Superintendent of Swan Point Cemetery, Providence, Rhode Island, died in that city February 10, 1911. He had been a member of the Society since 1869.

Eben Denton, formerly of Braintree, Massachusetts, and a member of the Society since 1870, died at his home in Dorchester, February 17, 1911, in his 90th year.

Stephen Willis Tilton of Brookline, Massachusetts, a member of the Society since 1866, died February 19, 1911, in his 78th year. He was associated with his brother, John E. Tilton, in the book publishing business in Boston, well known to horticulturists of the past generation as publishers of the American Journal of Horticulture from 1869 to 1871, commonly known as Tilton's Journal of Horticulture.

Miss Jemima Richardson Wilder of Dorchester, Massachusetts, died February 20, 1911. She was the daughter of the late Marshall P. Wilder and became a member of the Society in 1901.

John H. Hart, a corresponding member of the Society since 1892, died at Trinidad, February 20, 1911, at the age of 64. He had been superintendent of the Botanical Gardens of Trinidad since 1887 and had published many treatises on the economic plants of the British West Indian Colonies.

John Ward of Newton, Massachusetts, a member of the Society since 1865, died at his home in that city, March 1, 1911, in his 86th year. He was much interested in fruit culture and was a frequent exhibitor at the exhibitions of the Society of the products of his orchards and gardens.

Nathaniel Thayer of Boston and Lancaster, Massachusetts, well known in the financial world, died March 21, 1911, at the age of 60. He became a member of the Society in 1899.

George Hollis of South Weymouth, Massachusetts, died at his home there April 27, 1911, in his 72d year. Mr. Hollis was much interested in horticultural pursuits, specializing in peonies and phloxes. He was a constant exhibitor for years of these plants and received many awards in recognition of his skill in the production of new varieties. He was admitted a member of the Society in 1889.

Samuel Hubbard Scudder of Cambridge, Massachusetts, widely known as an entomologist, died at his home in that city May 17, 1911, at the age of 74. He had been a member of the Society since 1877. He made a specialty of the study of butterflies and published several works on that and other lines of insect life.

Frederick R. Mathison of Waltham, Massachusetts, a member of the Society since 1902, died at his home in that city May 21, 1911, in his 70th year. He was one of the veteran growers of the vicinity of Boston.

Charles Francis Choate died at his home in Southborough, Massachusetts, May 23, 1911, at the age of 83. Mr. Choate was prominent in the financial and business circles of Boston and became a member of the Society in 1884.

Cyrus Guernsey Pringle of Charlotte, Vermont, a member of the Society since 1875, died May 25, 1911, at the age of 73. In former years he was much interested in the breeding of economic plants and originated numerous improved varieties of wheat, oats,

and potatoes. He originated the Snowflake and other varieties of potatoes for which he was awarded the Society's Silver Medal in 1874.

In more recent years he had devoted his attention to botanical pursuits and made many journeys to the southwestern United States and Mexico collecting plants for the Gray Herbarium of Harvard University.

Oliver B. Wyman of Shrewsbury, Massachusetts, died June 5, 1911. He became a member of the Society in 1889.

Archibald Smith, formerly of Boston, died at his home in Oxford, England, August 2, 1911. He was elected to membership in the Society in 1894. He was at one time engaged in the seed business in Boston, removing to England about 1905.

Doctor Horatio C. Meriam of Salem, Massachusetts, died in that city August 11, 1911, at the age of 62. He was a dentist by profession and was greatly interested in horticulture, especially in the cultivation of irises. He became a member of the Society in 1883.

General Samuel C. Lawrence of Medford, Massachusetts, died in that city September 24, 1911, in his 79th year. He was the owner of an extensive estate in Medford and took great interest in its horticultural adornment. He joined the Society in 1904 and was always devoted to the advancement of agriculture and horticulture in his native town and state. He was a veteran of the Civil War.

Adin A. Hixon of Worcester, Massachusetts, a corresponding member of the Society, died September 25, 1911, at the age of 68. Mr. Hixon was secretary of the Worcester County Horticultural Society for upwards of twenty years and was one of the best known horticulturists in the state. A ready and interesting speaker, with a large fund of horticultural information at his command, his services were always in demand and freely given at the various meetings held throughout New England for the promotion of the horticultural interests of this section of the country.

He was twice called upon to lecture before this Society, giving in 1904 a lecture on "My Experience and Observations in Horticulture" and in 1907 on "The Possibilities of Peach Growing in New England." His pleasing personality won him many friends and his death makes a vacancy in the ranks of the workers in horticulture that will be hard to fill.

He was elected to corresponding membership in the Society in January of the present year.

Arthur F. Means of Somerville, Massachusetts, died October 21, 1911. He became a member of the Society in 1907.

Édouard François André, a corresponding member of the Society since 1887, died at La Croix, France, October 25, 1911, at the age of 70. He achieved a wide reputation in garden and park architecture, not only in his native country, but in numerous other parts of the world. He was also an industrious writer on horticultural subjects acting as a member of the staff and later as editor-in-chief of the Revue Horticole for more than fifty years.

Sir Joseph Dalton Hooker, a corresponding member of the Society since 1876, died at his residence at Sunningdale, England, December 10, 1911, at the advanced age of 94. Making botany his life work he traveled extensively and published many volumes on the floras of different regions. In 1865 he was appointed Director of the Kew Gardens, succeeding his father, Sir William Jackson Hooker, a position he held for twenty years.

Victor Lemoine of Nancy, France, a corresponding member of the Society since 1882, died December 12, 1911, in his 89th year. The work of Lemoine in the introduction of many popular varieties of garden flowering plants has made his name a familiar one throughout the horticultural world. Only a short time before his death he was awarded by the Trustees of the Society the George Robert White Medal of Honor in recognition of his eminent service in horticulture.

OFFICERS, COMMITTEES, AND MEMBERS, 1911.

Massachusetts Horticultural Society.

OFFICERS AND STANDING COMMITTEES FOR 1911.

President.

CHARLES W. PARKER, of Boston.

Vice-Presidents.

JOHN K. M. L. FARQUHAR, of Boston.
WALTER HUNNEWELL, of Boston.

Treasurer.

WALTER HUNNEWELL, of Boston.

Secretary.

WILLIAM P. RICH, of Chelsea.*

Trustees.

WILLIAM H. BOWKER, of Boston.
WILLIAM N. CRAIG, of North Easton.
ERNEST B. DANE, of Brookline.
ARTHUR F. ESTABROOK, of Boston.
PETER FISHER, of Ellis.
NATHANIEL T. KIDDER, of Milton.
JOHN A. PETTIGREW, of Boston.
THOMAS ROLAND, of Nahant.
RICHARD M. SALTONSTALL, of Chestnut Hill.
CHARLES S. SARGENT, of Brookline.
STEPHEN M. WELD, of Wareham.
WILFRID WHEELER, of Concord.

Nominating Committee.

FRANCIS H. APPLETON, of Boston.
FREDERICK W. DAMON, of Arlington
HARRY E. FISKE, of Wollaston.
CHARLES W. HOITT. of Nashua, N. H.
JOSIAH B. SHURTLEFF, Jr, of Revere.

* Communications to the Secretary, on the business of the Society, should be addressed to him at Horticultural Hall, Boston.

COMMITTEES FOR 1911.

Finance Committee.

WALTER HUNNEWELL, *Chairman.*
ARTHUR F. ESTABROOK, STEPHEN M. WELD.

Committee on Prizes and Exhibitions.

JOHN A. PETTIGREW, *Chairman.*
ROBERT CAMERON, WILLIAM N. CRAIG, J. K. M. L. FARQUHAR,
J. WILLARD HILL, M. A. PATTEN,

Committee on Plants and Flowers.

T. D. HATFIELD, *Chairman.*
JOSEPH CLARK, ARTHUR H. FEWKES, PETER FISHER,
THOMAS ROLAND, WM. C. RUST.

Committee on Fruits.

EDWARD B. WILDER, *Chairman.*
WILLIAM DOWNS, WILFRID WHEELER.

Committee on Vegetables.

DUNCAN FINLAYSON, *Chairman.*
VINCENT BUITTA, WM. N. CRAIG, EDWARD PARKER,
HERBERT W. RAWSON.

Committee on Gardens.

CHARLES W. PARKER, *Chairman.*
ARTHUR F. BARNEY, ARTHUR H. FEWKES, T. D. HATFIELD,
WILLIAM NICHOLSON, JOHN A. PETTIGREW, WILLIAM P. RICH,
CHARLES SANDER, JOSIAH B. SHURTLEFF, Jr.,
WILFRID WHEELER.

Library Committee.

CHARLES S. SARGENT, *Chairman.*
ERNEST B. DANE, GEORGE B. DORR, CHARLES S. MINOT.

Committee on Lectures and Publications.

EDWARD B. WILDER, *Chairman.*
J. K. M. L. FARQUHAR, CHARLES W. HOITT, WILLIAM P. RICH.

Committee on Children's Gardens.

MRS. ROBERT G. SHAW, *Chairman.*
MRS. E. M. GILL, MRS. W. RODMAN PEABODY,
MRS. DUDLEY L. PICKMAN, MISS MARGARET A. RAND,
MRS. JOHN E. THAYER.

MEMBERS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY, 1911.

Revised to December 31, 1911.

HONORARY MEMBERS.

Members and correspondents of the Society and all other persons who may know of deaths, changes of residence, or other circumstances showing that the following lists are inaccurate in any particular, will confer a favor by promptly communicating to the Secretary the needed corrections.

Sir Trevor Lawrence, President of the Royal Horticultural Society, London.

Dr. Henry S. Pritchett, Washington, D. C.

Albert Viger, President of the National Society of Horticulture of France, Paris.

Hon. James Wilson, Secretary of Agriculture, Washington, D. C.

CORRESPONDING MEMBERS.

George Francis Atkinson, Professor of Botany in Cornell University, Ithaca, N. Y.

Professor L. H. Bailey, Director of College of Agriculture, Cornell University, Ithaca, N. Y.

John Gilbert Baker, F. R. S., F. L. S., Kew, England.

Professor William J. Beal, Amherst, Mass.

W. J. Bean, Royal Gardens, Kew, England.

Charles E. Bessey, Ph.D., Professor of Botany in the Industrial College of the University of Nebraska, Lincoln.

Col. Gustavus B. Brackett, Pomologist of the United States Department of Agriculture, Washington, D. C.

Prof. John Craig, Cornell University, Ithaca, N. Y.

John Dunbar, Park Department, Rochester, N. Y.

Sir W. T. Thiselton Dyer, K. C. M. G., F. R. S., "Witcombe," Gloucester, England.

Parker Earle, President of the American Horticultural Society, Roswell, N. M.

H. J. Elwes, F. R. S., Colesborne, Cheltenham, England.

William G. Farlow, M. D., Professor of Cryptogamic Botany, Harvard University, Cambridge.

B. E. Fernow, University of Toronto, Toronto, Ontario.

Beverly T. Galloway, Horticulturist and Superintendent of Gardens and Grounds of the United States Department of Agriculture, Washington, D. C.

George L. Goodale, M. D., Cambridge.

Professor Byron D. Halsted, Botanist and Horticulturist at the New Jersey Agricultural Experiment Station, New Brunswick, N. J.

Professor U. P. Hedrick, New York Agricultural Experiment Station, Geneva, N. Y.

Dr. Augustine Henry, Cambridge, England.

J. W. Hoffmann, Colored State University, Orangeburg, S. C.

Senor Don Salvador Izquierdo, Santiago, Chile.

Professor William R. Lazenby, Department of Horticulture and Forestry; Secretary College of Agriculture and Domestic Science, Ohio State University, Columbus, O.

Émile Lemoine, Nancy, France.

T. C. Maxwell, Geneva, N. Y.

J. Ewing Mears, M. D., Philadelphia, Pa.

Wilhelm Miller, Editor of Country Life in America, Garden City, N. Y.

Sir Frederick W. Moore, Curator of the Royal Botanic Gardens, Glasnevin, Dublin, Ireland.

Sir Daniel Morris, C. M. G., D.Sc., M. A., F. L. S.

T. V. Munson, Denison, Texas.

Peter Nøvik, Secretary of the Norwegian Horticultural Society, Christiania.

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Williams, Henry Bigelow, Boston.
Williams, John Davis, Boston.
Williams, Mrs. J. Bertram, Cambridge.
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Williams, Philander, Taunton.
Williams, Ralph B., Dover.
Winsor, William Power, Boston.
Winsor, Robert, Weston.
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Wood, William K., Franklin.
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